

# FLIGHT

*The*  
**AIRCRAFT  
ENGINEER  
&  
AIRSHIPS**

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Founder and Editor : STANLEY SPOONER

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## Flight

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## "FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" photographs, these can be supplied, enlarged or otherwise, upon application to Photo. Department, 36, Great Queen Street, W.C.2.

For Sizes and Prices, see Advert. on page xxviii.

## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

Aug. 27-31 U.S. National Baby 'Plane Meeting, Milwaukee  
Sept. 8-16 American National Air Races, Los Angeles, Cal.  
Sept. 10-21 French International Light 'Plane Meeting at Orly

Sept. 12 .... Italian International Meeting

Oct. 7-28 International Aircraft Exhibition, Berlin

Oct. 8 .... Aero Golfing Soc.—Team Match v. Stage G.C.

Oct. 24 .... Aero Golfing Soc.—"Cellon" Challenge Cup

1929

Oct. 31 .... Guggenheim Safe-Aircraft Competition Closes

## EDITORIAL COMMENT



FOR many years FLIGHT has held the view that it is impossible entirely to prevent a determined enemy from making successful raids on London or any large city which a potential enemy might select as his objective. It is possible to inflict casualties on a raider to such an extent that it becomes doubtful whether raiding is worth while, but in order to do so an Air Force much larger and with much greater reserves in personnel and machines than anything yet contemplated would be required. In no form of warfare is it more true that "the best defence is attack" than in air war, and this at once means the necessity for developing to the utmost the type of machine required for attack, and the personnel, ground equipment, etc., which go with it. The air defence exercises that concluded last week have been intensely interesting, and give ample food for reflection.

The official communiqués give the number of raids, etc., but it will be long before the staff of A.D.G.B. has digested all the details at its disposal and decided what lessons have been learnt from these four days of exercises. Very likely those conclusions will never be made available to the public. But ordinary laymen looking on can come to certain tentative conclusions, which possibly may not coincide with the conclusions of the more popular daily papers. First one might notice the words of M. Maurice Pax in the *Petit Parisien*. He wrote:—"The English coldly remark that they stand to suffer a heavy reverse in the course of an aerial attack. They note that an enemy might easily force their lines of defence; they do not try to hide the fact that the heart of London might be stricken; they recognise calmly, loyally, courageously that a great enemy offensive in the air might be a tragic disaster for them. This is not pessimism; it is reason, cold reason."

Few R.A.F. officers, we believe, will deny those general conclusions, but they might have been based much more surely on the exercises of last year, when the weather was so bad that it gravely hampered the defence. This year the sky was often very clear,

especially at night, which was all in favour of the defence. In fact Sir Robert Brooke-Popham remarked on the Monday that he could not usually hope for much better weather than he was getting, and yet that day was the most helpful of all to the bombers. Three of the nights were very clear, and it seems that the defence had easily the upper hand during the hours of darkness. In the daylight raids, of which there were 57, only nine were completely successful in evading the defence. The raiders were attacked 39 times on the way in and 37 times on the way out, and 151 were judged to have been shot down by fighters, and 20 by anti-aircraft guns. Nearly 202 tons of bombs were carried by the bombers, but as many were brought down before they reached their objectives it is impossible to say how many tons were actually released on the objectives. The bombers shot down 139 fighters.

These figures are very arbitrary. They take no account of *morale*. Would any bombing force have maintained its determination after four days of such heavy casualties? Some folk talk of London in ruins, but the one thing certain is that London would have been strewn with the wrecks of enemy machines, and nothing would cheer the population up so much as that sight. But while we may accept the casualty figures of the bombers without much difficulty, there is a distinct doubt whether the fighters would have suffered so heavily as the umpires say that they have. There is a school of thought among experienced pilots which holds that a fighter diving on to a bomber does not run much risk, and the same would apply in the case of fights between formations when the numbers were about equal. The gunner in the tail of the bomber is, according to this school of thought, always at a disadvantage compared with the pilot of a fighter. This cannot be tested out on manoeuvres; it needs actual war. But the very existence of that school of thought makes us query the fighter casualties. On the other hand, we may also query the successes allowed to the "Archies." And again, in a month of more cloud, in more typically English weather, the raiders would have been far more successful.

The main point, however, is this. The frame of mind which wants the defence to win on manoeuvres, because the fighter squadrons are the gallant defenders of London, is perverted, though natural. What, we believe, the R.A.F. authorities want, and what we citizens all ought to want, is

for the bombers to be successful. Our main defence lies, not in the fighters and the searchlights, but in our own bombers. We want them to be as successful as possible. We want to know that our own defence cannot keep them out, and therefore it is unlikely that any other defence can keep them out. We do not want to have to deal with enemy bombers, as the fighter squadrons do, after they have crossed our coasts. We want to deal with them on their own aerodromes, and in their own aircraft factories; and it is not our fighting squadrons but our bombing squadrons which can deal with them there. In fact, it is doubtful whether a vital future lies before the fighter aeroplane except for army work and navy work. For air defence we want always more and better bombers. In these exercises Eastland had only nine squadrons of day bombers (one at cadre strength), and four squadrons of night bombers, *plus* reserves to replace casualties. Westland had no bombers at all. That was the most unreal fact of the exercises. If our Westland bombers had existed and had been busy on the Eastland aerodromes, could the 12 serviceable squadrons of Eastland have carried out 57 day raids and a number of night raids during four days—even if Eastland's *morale* had not been shaken at all by his casualties? It is surely very doubtful.

Finally, we should like to revert to the words of Air Vice-Marshal Sir John Steel, A.O.C. Wessex Bombing Area, recorded by Maj. F. A. de V. Robertson last week. He did not aim at laying London in ruins, only at crippling the fighting efficiency of Westland. All the objectives were places of military importance, and legitimate targets for bomb or shell, whichever could best reach them. It is unavoidable that bad shooting must result in casualties to civilians, but that is a very different thing from a deliberate slaughter of civilians with high explosive and gas, which some people think is inevitable and even desirable in the next war. And if we British do not strike deliberately at the civil population, it is at least doubtful whether any possible enemies of ours will do so. There is, we believe, no precedent at all in history to show that "frightfulness" has ever affected the *morale* of a virile nation, and if so, then it is useless butchery, sure to evoke reprisals in kind. As Mr. J. M. Spaight has written in "Air Power and War Rights" (p. 28), "It will simply not pay to bomb the enemy's cities at one's good pleasure."

### Olympia Engineering Exhibition

THE fourth Machine Tool and Engineering Exhibition will be held at Olympia, September 5-22, this year. The organisers are the Machine Tool Trades Association, 70, Victoria Street, London, S.W.1.

### Montreal-New York Air Mail

THE contract for carrying air mail from New York City, via Albany, to Montreal, one way, has been awarded by the United States Government to Canadian Colonial Airways Incorporated, of New York City. The successful bidder already holds a contract from the Canadian Government for the south-bound trip from Montreal to New York City. Service under the contract is to be inaugurated within six months and is to run for a 10-year period. Air-mail postage will not be required, but regular first-class mail will be carried.

### Invitation to U.S.A. for Aviation Conference

AN invitation has been received from the United States Government for the participation of the British Empire in an International Conference on Civil Aviation, which is to be held at Washington on December 12, 13 and 14 next, and an

International Aeronautical Exhibition which it is intended to hold at Chicago in the preceding week.

Official as well as unofficial representation at the conference is invited, and the Air Ministry will, if possible, send a delegate. Unofficial delegates representing the aircraft industry, operating companies, scientific laboratories and all branches of commercial aviation are specially mentioned in the invitation. Delegates are asked to prepare papers on some phase of aviation development and the hope is expressed that these papers may be received in Washington not later than October 1 next, in order that they may be printed for distribution at the meeting. The papers will not be read, but an opportunity for discussion will be afforded.

Further details of both the conference and the Exhibition will be forwarded by the United States Government, when more definite plans have been agreed upon.

In the meantime the United States Government have asked for an early reply to the invitation, and the Air Ministry will be glad to have early advice of the intention of firms and individuals in this country to take part. Correspondence should be sent to:—The Director of Civil Aviation (C.A.3), Air Ministry, Gwydyr House, Whitehall, S.W.1.

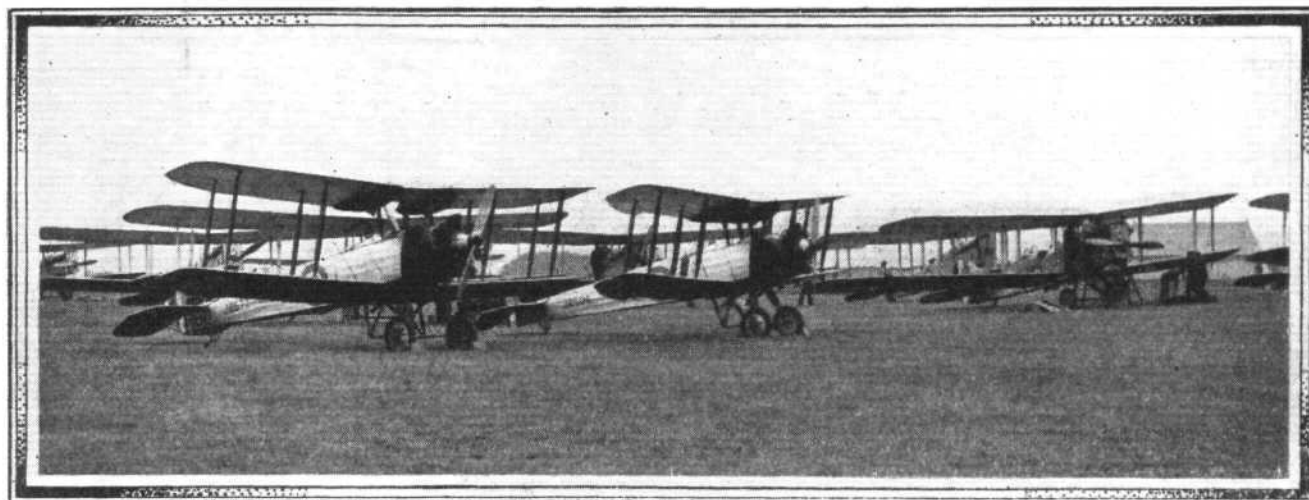
# THE AIR DEFENCE EXERCISES

By "FLIGHT'S" Special Correspondent, Maj. F. A. de V. ROBERTSON, V.D.

ONE feature of this year's air exercises which deserves more than a passing notice is the excellence of the press and publicity arrangements made. The press officer of the Air Ministry, Mr. C. P. Robertson, received and acceded to all the various requests made by the correspondents with his usual unruffled efficiency. Group-Capt. R. C. M. Pink, C.B.E., and his staff of escorting officers were ubiquitous, dashing from aerodrome to aerodrome continually, and everywhere making smooth the path of the journalist. Perhaps the prophetic mind of the Psalmist was foreseeing their activities when he wrote, "And in the night season also

make us desire the warmest possible relations with our old ally of 1914-18. In the following Odyssey I shall not attempt to usurp the functions of the narrative officer, whose *communiqués* are printed below, but shall confine myself to what I saw.

On Wednesday I sped across one of the home counties to visit an observation centre. The room in which it was located was not underground, but probably the centre will go to earth long before there is any chance of our disagreeing with any continental Power. The Chief Constable was there in person supervising the activities of his Specials. They, like



["FLIGHT" Photograph

**AUXILIARY AIR FORCE MACHINES AT LYMPNE :** In the foreground two Avro-Lynx, and behind a number of D.H.9a's.

I take no rest." The narrative officer at Uxbridge, Wing-Commander A. C. Maund, C.B.E., D.S.O., gave the greatest assistance to the press. He kept a stream of most excellent *communiqués* issuing at frequent intervals, which supplied the newspaper offices with a good deal more than the bare bones of the events. Consequently, the special correspondent was left free to roam at will and to study on the spot some of the many intricate details which go to make up the complicated business of air defence. In fact, so excellent was the

the actual watchers, were all unpaid volunteers. I had heard Sir Robert Brooke-Popham remark a couple of days earlier that it was probably because they were unpaid that the special constables were so good and keen. They were men from all sorts of civil professions, who have to pursue their ordinary avocations during the day, but give up their leisure in the evenings up to 11 p.m. to serving their country. In war-time there would have to be night watches also, but for the exercises this system closed down at 11, and thereafter



["FLIGHT" Photograph

**WITH THE A.A.F. IN CAMP :** Officers' Lines on Lympe Aerodrome.

publicity that the *Echo de Paris* thinks that there was some political motive behind it—namely, that the people of Great Britain were to be terrified into demanding an even closer entente with France. We may assure our contemporary (for I feel sure that on this point the Editor will agree with me) that such measures are not necessary to

the night bombers had to report their own progress by wireless, being allowed to make a certain margin of deliberate error in each report. I could not but be struck by the look of the men sitting round the large map on the table in the observation centre. The Chief Constable was evidently able to pick and choose, and only men of quick intelligence were



employed. Their attention was concentrated on the business in hand, and if they were irritated by the irruption of journalists they did not allow it to divert their minds for a second. Each man had 'phones on his head and was in communication with three observation posts. The map on the table was squared and lettered, and as each post reported hostile aircraft passing over a certain square, a counter was placed on that square. So the course of each raid was plotted out. Prompt information was, of course, sent on to the Operations Room of the Defence H.Q., and when a raid was obviously about to pass off that map on to a contiguous one, the next observation centre was given due warning. It was fascinating to watch the system at work. That it has proved most efficient the Air Ministry has handsomely acknowledged in the official *communiqués*. In fact, one may see for oneself proof of its success in the very small number of raids which were carried through without being attacked by fighter squadrons either when coming in or when going out.

From this interesting centre I journeyed more miles—

of work which keeps one out in the meadows on a summer night. To a person of imagination this fascination must be magnified when one is watching for a night raider stealing in to bomb London, locating him and revealing his presence and his course to those who can deal with him. Out there, probably the watchers seldom have the satisfaction of seeing the lights of the fighters who have been sent into the air by their own message to tackle the bomber; but the *communiqué* will tell them in due course whether the fighters found that particular raider and how he fared at their hands. When one reads that he was shot down, the gratification must be quite as great as if one had pulled the trigger oneself.

Work is none the less valuable because it may be pleasant and the very highest credit is due to these special constables. The system has obviously grown more elaborate than it was last year, and we know that it has proved good. Certainly it will have to be extended still more widely, and spread into more counties. When the call comes for more specials it will doubtless be answered, and those who join may be



[“FLIGHT” Photograph]

**THE AUXILIARY AIR FORCE IN THE AIR DEFENCE EXERCISES :** Our photograph shows some of the Officers of No. 601 (County of London) Bombing Squadron, which is under the command of Squadron Leader Lord Edward Grosvenor. From right to left: Flying-Officer E. D. Whitehead Reid, Flight-Lieut. S. B. Collett, Flying Officer H. N. St. V. Norman, Flying Officer Norman H. Jones, Flying Officer J. J. Parkes, Flight-Lieut. H. N. Thornton (Adjutant), Pilot Officer A. G. Haward and Flying Officer G. J. C. Mahony (Assistant Adjutant).

of course, without exceeding the legal speed limit, except perhaps once or twice—to an observation post. Here we found the actual sentinels, the all-important people. The post itself was so inconspicuous that one could hardly grasp its importance. Two men stood or sat in an open field beside a simple-looking instrument on a tripod. One was ready to work the instrument, while the other attended to the field telephone. The field stood rather high, and all round was an open stretch of country which would facilitate seeing and hearing. The coast was just seven miles away. When we arrived a relief was about to take place, so there were four men there—all wearing ordinary civilian clothes like the men in the Observation Centre. They explained the working of the instrument. It was not a sound-locator, but when aircraft were sighted it fixed the square on the map over which they were flying. The men going off duty said that they had had a rather dull afternoon, very few raiders having come within their ken. I envied the men who were coming on duty for the early part of the night. Provided that the weather is fine, it is very fascinating to have a job

assured of a very interesting job. In the meantime all credit to those who are doing the work so admirably now!

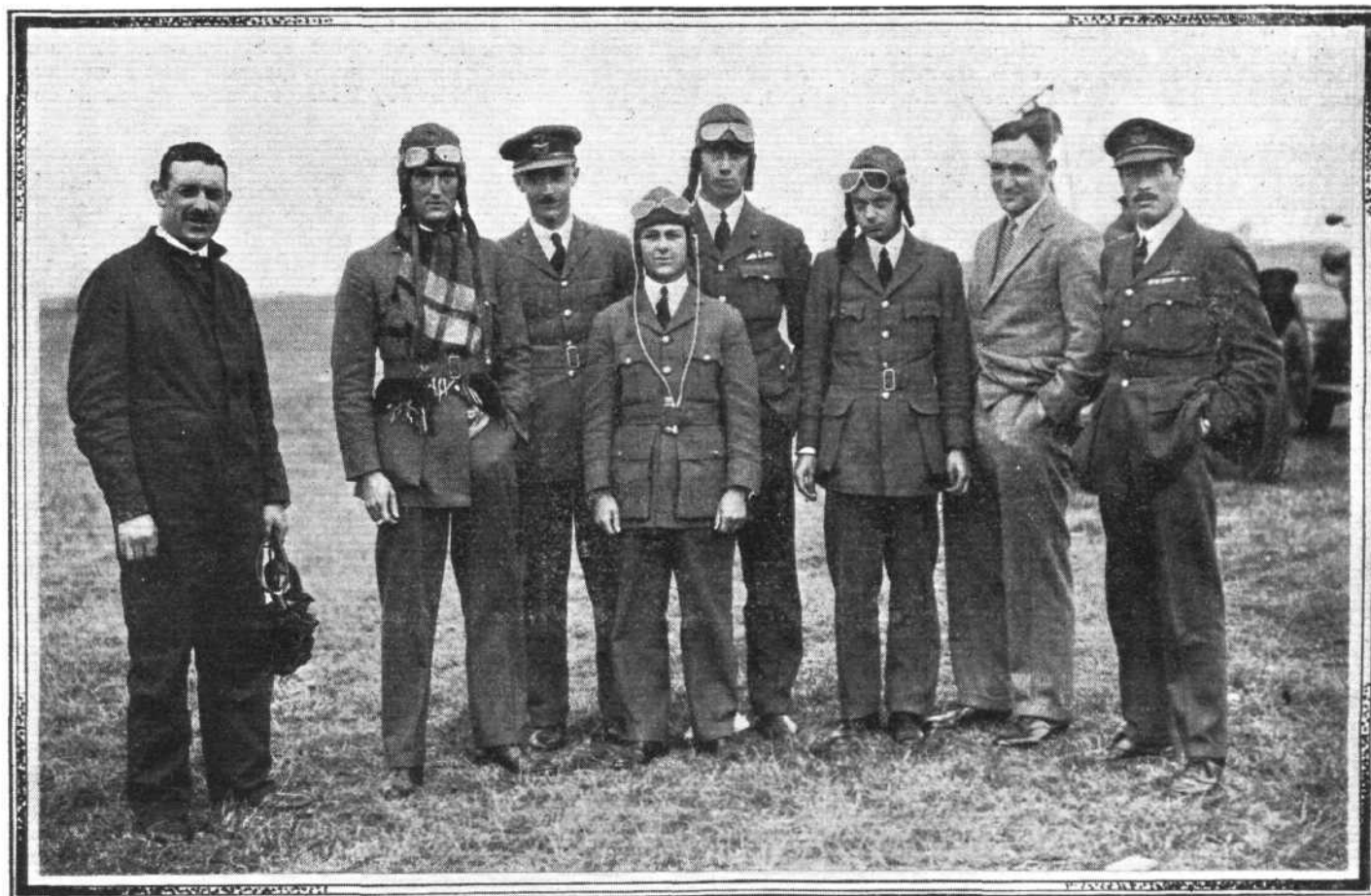
#### The Auxiliary Air Force

The fascination of the observation system was so great that it was late when I got to Manston. In the darkness lights moved across the sky, for the Virginias of No. 9 Bombing Squadron were up, and they kept their lights on until they crossed the coast to commence a raid, and again after the raid was over when they were coming home to roost. I saw one bomber start on a raid, and another come back from one. I also saw the D.H.9a's of No. 603 County of Warwick Bombing Squadron, which was using Manston as a war station. It is a proud squadron, No. 603, for, although it is the youngest of the Auxiliary squadrons in England, it is the holder of the Esher Trophy for efficiency among the A.A.F. squadrons. Ramsgate, I gathered, did not much enjoy being reminded of the bad time it received from enemy aircraft during the Great War, and one minor official who had been kept on duty late through the exercises, seemed to be of the opinion that

everyone connected with them, and *FLIGHT*'s special correspondent in particular, ought to be locked up. Still, the good people of Ramsgate must be quite used to the night operations of No. 9 B.S. which go on pretty continuously; and the saner members of the public must realise that the object of these exercises is to do all that can be done to prevent a recurrence of the horrors of 1914-18.

The employment of three squadrons of the Auxiliary Air Force is one of the most interesting novelties of the exercises this year. This force, together with the Special Reserve is definitely part of the programme of expansion of air defence, and Air Ministers have taken credit in Parliament for the economy effected by using citizen units. It may be remarked, by the way, that one would like to see the Special Reserve in a more forward state. No. 503 County of Lincoln B.S., stationed at Waddington, is still in a cadre state, but made 3 raids, 2 on North Weald aerodrome and 1 on the Air Ministry. It suffered some casualties, but in each case part of the formation reached its objective.

though the D.H.9a's and the Libertys are all old, the squadron always took off with a full complement of nine machines and always brought them all home. So the highest praise is due to all alike—pilots, air gunners, and mechanics. The pilots of this squadron nearly all are owners of light aeroplanes, and when the D.H.9a's were quiescent on the ground the air was full of "Widgeons," "Moths" and other light craft, stunting merrily, just to show that flying a bomber does not necessarily make a pilot heavy-handed. The authorities are especially pleased with the air gunners of the squadron, who act generally as observers, and fight, bomb and report, and do anything else which comes along. They are very carefully selected airmen, not all mechanics by trade. Some are bank clerks, one is an undergraduate, and so on. As for the riggers and fitters, the fact that there were always nine machines serviceable and no forced landings speaks volumes for their indefatigable ability. No. 601 B.S. carried out four daylight raids, three of which reached their objectives and released their bombs before they were attacked, while one got home



[*"FLIGHT"* Photograph

**ANOTHER AUXILIARY AIR FORCE GROUP :** A few of the officers of No. 600 (City of London) Bombing Squadron which is under the command of Squadron Leader the Rt. Hon. Frederick E. Guest. Left to right: Flight-Lieut. H. B. Russell, A.F.C., Pilot Officer D. B. H. Coates, Pilot Officer G. C. Bonner, Pilot Officer N. Montefiore, Pilot Officer Browne, Pilot Officer E. A. Burton, Flying Officer T. Courtis, Flight-Lieut. Hon. J. H. B. Rodney, M.C. (Adjutant).

The Auxiliaries, however, are doing right well. Some readers of *FLIGHT* will remember a discussion on citizen air forces at a house dinner of the Royal Aero Club some time ago, when Squadron Leader Lord Edward Grosvenor remarked cheerfully, "You just wait; we shall surprise you yet." Well, I was very surprised when I got to Lympne on Thursday, August 16, and realised how very efficient No. 601 County of London B.S. is—and No. 600 City of London likewise. Everyone was sorry that Lord Edward is in a nursing home and cannot lead his squadron out to raid. His many friends hope he will soon be quite well again. Meantime Flight-Lieutenant S. B. Collett has commanded the squadron, and has done so right well. An Auxiliary A.F. squadron has three regular officers, adjutant, assistant adjutant, and stores officer, and about 20 regular airmen. All the rest of the personnel are non-regular. Yet the squadrons have shown that they can fly in good formation, can find their way to a target and bomb it, can use their machine guns well, and can write excellent reports—which is a matter of the utmost importance to the higher command. In addition to that,

without being attacked at all. The formation flying was always good.

The City of London Squadron, commanded by Squadron Leader the Rt. Hon. F. E. Guest, P.C., C.B.E., D.S.O., M.P., was proud of the fact that all the pilots who took part in its raids had been trained in the squadron—none were old war pilots. It also carried out four raids, two on the Air Ministry and two on Hornchurch aerodrome, and all found their objective. Three of the raids were not attacked before they released their bombs, though all were attacked on their return. They suffered some casualties, but they gave nearly as good as they got. On one of the Hornchurch raids three bombers were shot down, but the squadron made a bag of four fighters. The raid on Wednesday suffered no loss, but shot down one fighter which had the impudence to attack No. 600.

The Auxiliary Air Force movement must spread. It is cheap to the taxpayer, and it has this week proved itself good. It is not the policy of the Air Ministry to force the raising of squadrons on the Territorial Associations of the



counties. But if a county proposes to raise a squadron, the proposition is sure of a very sympathetic hearing. Next year it is hoped that the squadrons from the City of Glasgow and the City of Edinburgh will take part in the exercises. The Special Reserve squadrons are No. 502 Ulster Bombing Squadron, No. 503 County of Lincoln B.S., No. 504 B.S. (at Hucknall, Nottinghamshire). Surely there are other counties and cities in Great Britain which would wish to take part in this really important movement!

#### The Territorial R.E. Searchlights.

On Thursday evening I wended my way, causing no little trouble to the long-suffering escorting officers, to Kenley aerodrome. It was a splendidly lurid evening for the last phase of the exercises, with great banks of clouds through which the sunset lights kept breaking. I found the pilots of the fighters all very tired and short of sleep. The whole Fighting Area had been very hard worked during the four days. Not only had they put in many hours in the air, but the "standing by" had taken it out of them considerably. While I was there No. 23 F.S. was standing by, while No. 32 was more or less waking up from belated slumbers. All were agreed that such intensive warfare with so few squadrons could not be carried on for much over four days, or the human factor would break down. While we were discussing this, the

But the rear starboard "Horsley" was slightly out of formation, and, seeing that, the "Gamecocks" concentrated on the one machine. We could see them diving onto it, and fancied we heard the rattle of their machine guns. Then the "Horsleys" climbed into the clouds, and fighters were not allowed to fly through clouds for fear of a collision. No. 23 Squadron broke up, working apparently two machines together, and quested round searching for a gap in the cloud bank through which they could climb. At intervals we caught glimpses of the "Horsleys," and presently one of them emerged below the cloud bank, lost, and hunting for its comrades.

At that moment a "Siskin" came up from behind us, flying high and straight. Who it was, where it came from, and what its business was, we could not guess. The "Gamecocks" were by now out of our ken and all our attention was fixed on the "Siskin." Would it see the lone "Horsley"? I wanted to shout and wave to it. Yes, something must have prompted the "Siskin" pilot to look over his right shoulder, and he descried the "Horsley" several miles away from him. At once he turned and gave chase, the throttle of his "Jaguar" full open. Steadily he overhauled it, climbed above it, and dived onto its tail. Then it manœuvred under its tail and put in a good burst from there. The sins of that "Horsley" had evidently found it out.

Some A.A.F.  
"Nurses":  
Attending the  
Liberty engine of  
a D.H.9a. The  
regular partici-  
pation by A.A.F.  
units and the  
absence of forced  
landings prove  
the efficiency of  
the "amateur"  
engineers.

["FLIGHT" Photograph]



alarm sounded for No. 23 to go up. We dashed out of the mess to the aerodrome, where the Hucks starter was hurrying frantically round from "Gamecock" to "Gamecock." The "Jupiters" were speedily running, and in less than 2 mins. the first flight was off the ground. No. 2 flight was only a couple of seconds later, followed by No. 3 less two machines. The squadron had run short of pilots.

Saying good-bye to our hosts, we climbed into our car and went off to find a searchlight post and learn something about its share in the war. Presently we found one, in charge of a captain of Territorial R.E., wearing war ribbons. It was still not dark enough for the searchlight to be working, so we were allowed to examine the sound-locator, the details of which must not be described. As we watched, a formation came into sight below the very high bank of clouds, and binoculars showed it to be a flight of five "Horsleys." That must be No. 100 B.S. from Andover, for No. 11 would have out either a squadron of nine or a flight of three machines. Almost at once a squadron of fighters, less two machines, was descried flying towards the raiders. Undoubtedly the "Gamecocks" of No. 23! The coast watchers had given true tidings of the "Horsleys'" approach, and Sir Robert Brooke-Popham had timed the take-off of No. 23 nicely. They had been in the air just about an hour, and they were now up many thousand feet. They engaged the bombers, but it seemed that they were met by heavy fire.

The "Siskin" then banked and took up its former course, as it evidently was in a real hurry to get somewhere, and this little scrap had been an interruption.

I need not describe a searchlight and I must not describe a sound-locator, but, of course, all the praise due to the Auxiliary Air Force and to the corps of observers is also due to the Territorials who work the lights. It used to be the fashion, previous to 1914, to consider Volunteers and Territorials fair butts for witticism. One does not qualify for the Volunteer Officers' Decoration without having learnt that. Now things are improved. The Territorials have proved that we cannot do without them, and the captain who showed me his searchlight was a model of enthusiasm on his job. So were the men who obeyed his orders. It would be hard to improve upon them. All the same, it is my opinion that air defence is the job of the Royal Air Force, and that every unit which contributes to that defence ought to be in blue uniform, not in khaki; even as the armoured cars in Iraq are R.A.F. units and are not lent by the War Office.

The searchlights work in groups of three, and where the three beams intersect there is probably a night bomber. If he is not actually at the point of intersection, he is probably not far off, and the fighters know that it is usually worth while going up to investigate. The diffused light from the beams may reveal to them a bomber which has not actually been

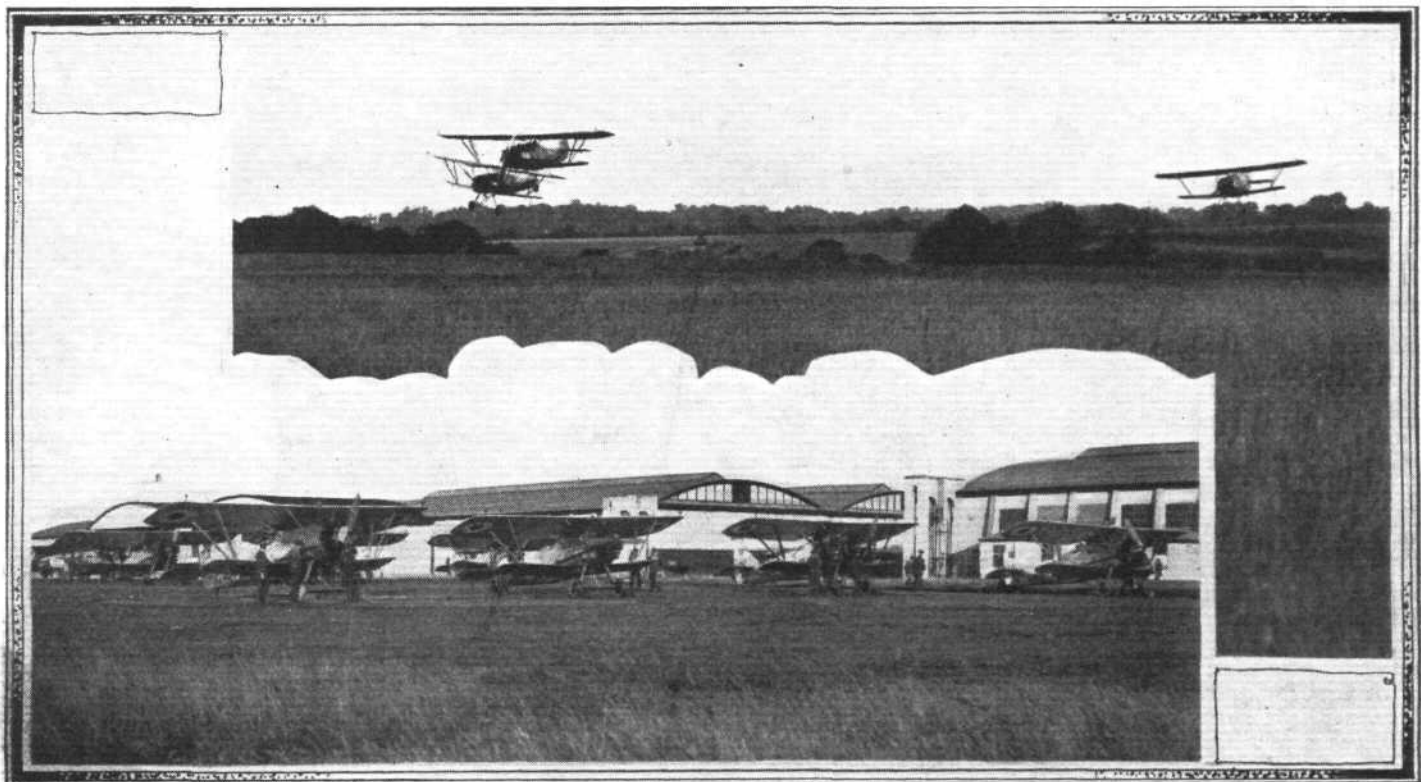


["FLIGHT" Photograph

**INTO THE CLOUDS :** No. 25 (Fighter) Squadron (Armstrong-Whitworth "Siskins") off on the first night patrol of the Air Defence Exercises.

caught in the beams. Often as they get close they catch sight of his exhaust, and then they can deal with him. Without the lights, the fighter pilots confess that they cannot do much at night. Clouds do not always absolutely conceal the bombers. Where they are thin, some light filters through and sometimes shows up the "Virginia" or the "Hyderabad." The resources of the searchlight crews are various. The sound-locator is only a sort of last resort. Visual

observation is naturally preferred. When the beams are searching, men sit in chairs well tilted back with binoculars in their hands, at a considerable distance from the light, and sometimes are able to spot a bomber before the beam has caught it. Reports go in from each light to a centre, as in the case of the observer corps, and as a bomber leaves one group of searchlights, one beam endeavours to pass it on to the next group. I should dearly have loved to stay with



["FLIGHT" Photographs

**NO. 32 (FIGHTER) SQUADRON IN ACTION :** Above, three Armstrong-Whitworth "Siskins" returning from a patrol. Below, a squadron of "Siskins" ready for the fray.



**THE AIR DEFENCE EXERCISES :** With No. 23 (Fighter) Squadron, Kenley. The top picture shows a few of the squadron's "Gamecocks" off duty for a few hours, while below is seen a scene immediately after an alarm was received. The Hucks starter got busy without delay.

that light until the close of the operations, for the C.-in-C. called them off at 11 p.m. that evening ; but Fleet Street was calling, and I had to tear myself away.

#### OFFICIAL REPORTS

LAST week we published the Official Communiqués for Monday and Tuesday. Below we give the remaining.

19.30 hours—August 15, 1928.—Operations began again this evening at

18.00 hours. Ten squadrons have been ordered to take part in the most powerful attack undertaken so far on targets similar to those of previous raids.

Visibility is good but there are considerable belts of cloud from 3,000 to 8,000 ft. up which have hindered the work of observers in places. There is a westerly wind of from 15 to 20 m.p.h.

So far six of the raiding formations have been reported and bombing of the objectives has started.

Eight fighter squadrons have gone up to intercept them and a number of fights has already been reported from over the London area.

Further information is now available regarding this morning's air attack.

Back from a "Strafe": Aircraftmen refuelling an Armstrong-Whitworth "Siskin" after its return from a patrol.

["FLIGHT" Photograph]







"Stop, Look, and Listen": A sound-locator at work. By means of these instruments the direction and angle of a raider is located.

["FLIGHT" Photograph]

on London. The weather to the south of London was fine with only a moderate amount of cloud, while visibility was good.

A strong wind from the S.W. high up helped the bombers from that direction to get in before they could be intercepted. Conditions, however, were unfavourable to the N.E., and No. 39 Squadron, whose attack was planned to cross the coast at the Naze, had to abandon the raid before reaching their target after battling against strong head winds, clouds and rain.

The County of Warwick Squadron, crossing the coast at Ramsgate, succeeded in bombing the Air Ministry and returning without being intercepted. Of the remaining four bombing squadrons taking part in the raid, three were attacked by fighters both before and after reaching their objectives while the last one was attacked as it reached the target.

Seven of the nine fighter squadrons sent up reported that they had attacked bombers and made varying claims which have not yet been assessed.

10 p.m.—August 15, 1928.—The following further details are now available about the evening phase of August 14. 53 bombers belonging to six squadrons took part in the attack on London. A high wind from the S.W. and clouds made conditions favourable for bombers coming from the S.W. as it helped them to evade the fighters on the way to the objective.

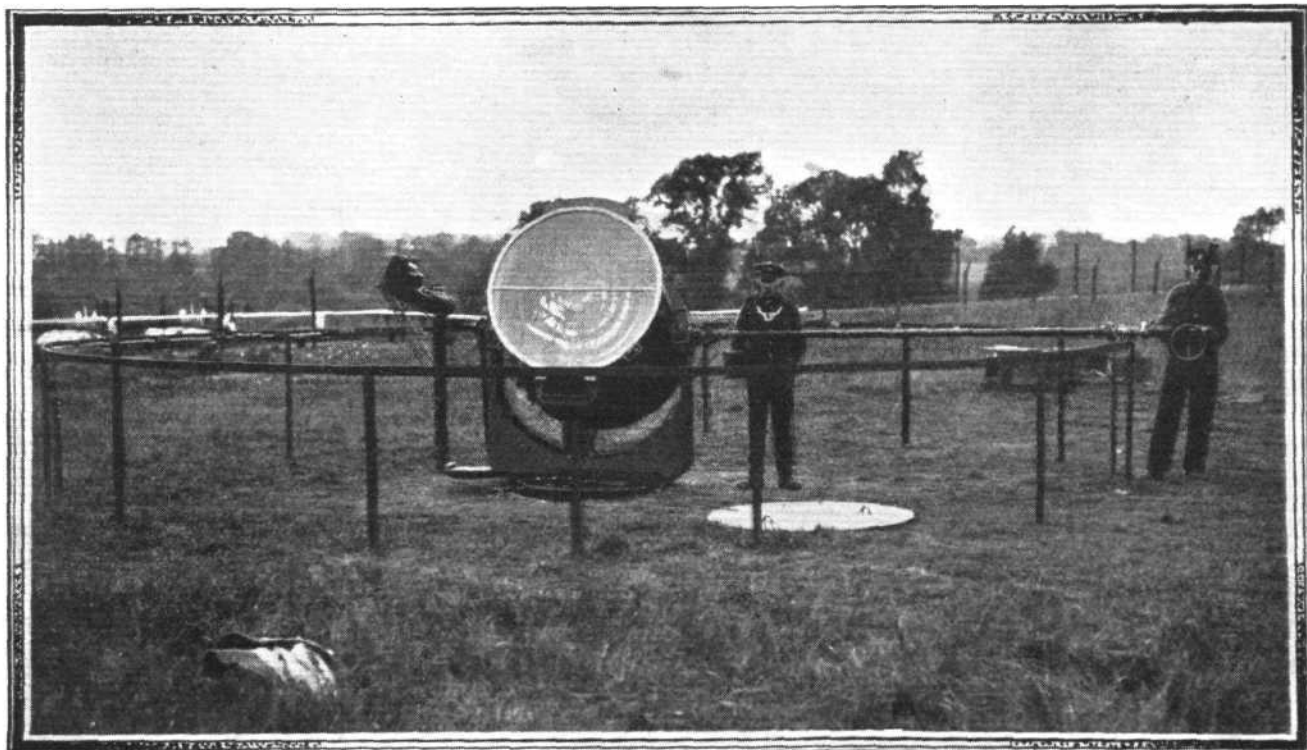
Heavy fighting took place over the targets and on the return journey, but three out of the 11 raids undertaken were adjudged to have failed, and two were only partly successful. 24 bombers were brought down, including 5 by A.A. fire, and 13 fighters were shot down.

The night phase was conspicuous for the success of the searchlights in picking out and holding bombers, thereby enabling the fighters to attack them. A very high proportion of bombers were intercepted in this manner on their way to the targets, and their losses were heavy.

Bad weather to the N.W. of London prevented all but one raider from getting through from the Essex coast.

The most interesting feature of this evening's operations was an attempt to intercept the fast "Fox" bombers belonging to No. 12 Squadron. Hitherto this unit had been successful in evading the defence on the way to the target, although they had not always returned unscathed.

This evening they did not launch their attack until the other raiders had reached the London area and the fighters were fully occupied. At 7.10 p.m., six raiders flying at high speed were reported over Biggin Hill flying north. In 10 mins. they were returning over Croydon after having bombed the R.A.F. Stores Depot, Kidbrooke. Two fighter squadrons were patrolling an area

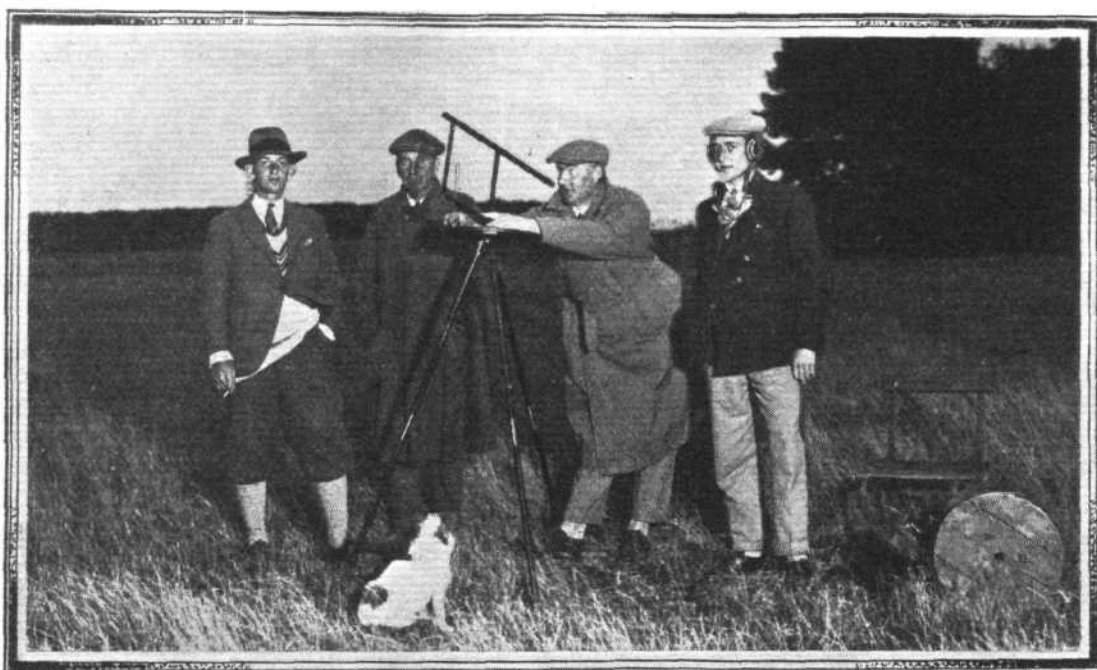


["FLIGHT" Photograph]

**SPOTTING THEM :** Searchlights used in conjunction with sound-locators proved a very effective means of picking up the night raiders. One of these searchlight stations is shown here.

Doing good work: One of the many small observation posts which spotted and reported the passing of raiders overhead bound for London.

("FLIGHT" Photograph)



between them and the coast but the "Foxes" slipped by, making use of the clouds, their high speed, and by changing course frequently.

They were next reported over Horsham at 7.32 p.m. The route which they were taking towards the coast was now clear and the A.O.C., Westland Air Forces ordered up No. 43 Squadron, which was standing by at Tangmere, but once more the "Foxes" escaped, thanks to their great speed.

Owing to the very large amount of flying which has already been carried out, Air Marshal Scarlett has decided to terminate the Exercises at 1 a.m. on Friday, August 17, by which hour all aircraft have been ordered to be clear of the Operational Area.

Noon—August 16, 1928.—During the night raids by heavy bombers belonging to four squadrons were continued. The weather in the main favoured the defence, visibility being generally good, with the exception of the Thames Valley and to the North. There was a layer of broken clouds from 3,000 to 10,000 ft. up and a wind of 30 m.p.h. from the West at high altitudes. Good plotting by ground observers and skilful handling of the searchlights resulted in 24 of the 29 raiders being discovered.

No. 99 Squadron, attacking to the North of the Thames, where the weather was least favourable to the defence, was the most successful of the raiders, as two of the six machines employed reached the target without being caught by searchlights or fighters.

No. 32 (Fighter) Squadron reported that they had no less than 20 fights with bombers during the night. Twenty-two of the 29 raiders in all were attacked by fighters. In addition the A.A. gunners were active but the umpires' verdicts are not yet available.

Early this morning Eastland made another concentrated attack on London with 7 squadrons of day bombers. The weather was mainly fair with a layer of broken cloud from 5,000 to 10,000 ft. up. Visibility was good on the whole except in the Thames Valley and the wind was light. Eight fighter squadrons were sent up and intercepted a proportion of the raiders before the latter had arrived over their targets.

No. 12 Squadron with fast Fox day bombers was intercepted this time by two squadrons South of London when on the way in.

No. 39 Squadron, whose objective was Uxbridge, was attacked six times in all, half being on the way in.

10 p.m. August 16, 1928.—The last day raid of the Air Exercises has been outstanding for several reasons. To begin with, exceptionally complete and accurate information was supplied by the Observer Corps, although the

bombers came in in groups of squadrons close together instead of being well separated. Further, at least one squadron split up into flights after reaching the coast. In spite of the resulting difficulties, the progress of each formation was well reported. The work of the Essex and Sussex Observers was outstanding.

With this information in his possession, the Westland Commander was able to place his fighters so as to intercept the raiders and an unprecedented number of combats took place. The eight fighter squadrons employed have reported no less than 23 fights with the seven raiding squadrons. Nos. 19 and 56 Squadrons to the East of London and Nos. 41 and 1 Squadrons to the south were specially successful in intercepting the bombers.

It is not yet possible to assess the number of bombers who succeeded in evading interception on the way in.

To-night, there is a layer of cloud from 4,000 to 5,000 ft. up, the base of which appears to be dropping. Conditions seem very unfavourable for the defenders. There is a wind of about 30 miles per hour at 10,000 ft.

Night bombers have already been reported as approaching the London area from the Essex Coast and from the direction of Hastings. Four fighter squadrons have patrols up to intercept the raiders.

Press Summary, Noon, August 17th, 1928.—At 9 o'clock last night the first night bombers were reported to have crossed the coast of Essex and Kent in the final stage of the operations. There was only a light wind near the ground and so observers were able to hear approaching raiders clearly; adequate warning was therefore available.

There was in places a layer of clouds at about 4,000 ft. varying in thickness, which tended to hinder the work of the searchlights. Where the clouds were sufficiently thin the raiders flying above them could be seen by fighters still higher up against the patch of clouds lit up by searchlights from below.

Of the four fighter squadrons sent up by the defence No. 32 was the most successful in intercepting raiders, and by 11 o'clock had had nine combats. In all 18 fights were reported and a majority of the bombers who reached the zone of operations by the time the exercises were stopped were attacked.

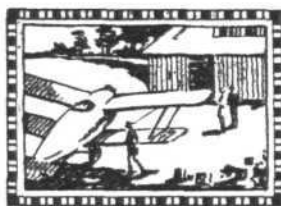
At about 11 o'clock low clouds became prevalent in the searchlight area and as these conditions were dangerous for attack by fighters on bombers and as searchlights and night bombers had had ample work in the three previous nights the Air Officer Commanding in Chief decided to terminate the exercises at once instead of allowing them to continue to 1 a.m. as had been announced previously.



INTERNATIONAL APPRECIATION : This photograph shows a batch of Fokker aeroplanes outside the flying sheds at Schiphol aerodrome, Amsterdam. On the left are four C.V.'s for the Swedish Air Force. Next comes "Mr." Carbery's Universal. Next to that is an F. VII built for the Danish Air Traffic Co. An F. VII-3m for the Nederlandsch-Indische Luchtvaart Maatschappij follows, and in the foreground is an F. VII built for Poland. The C.V.'s and one of the F. VII's are fitted with "Jupiter" engines, while the F. VII-3m has three Armstrong-Siddeley "Lynx" engines. The latter machine is one of a batch to be used in the Dutch East Indies



## PRIVATE



## FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

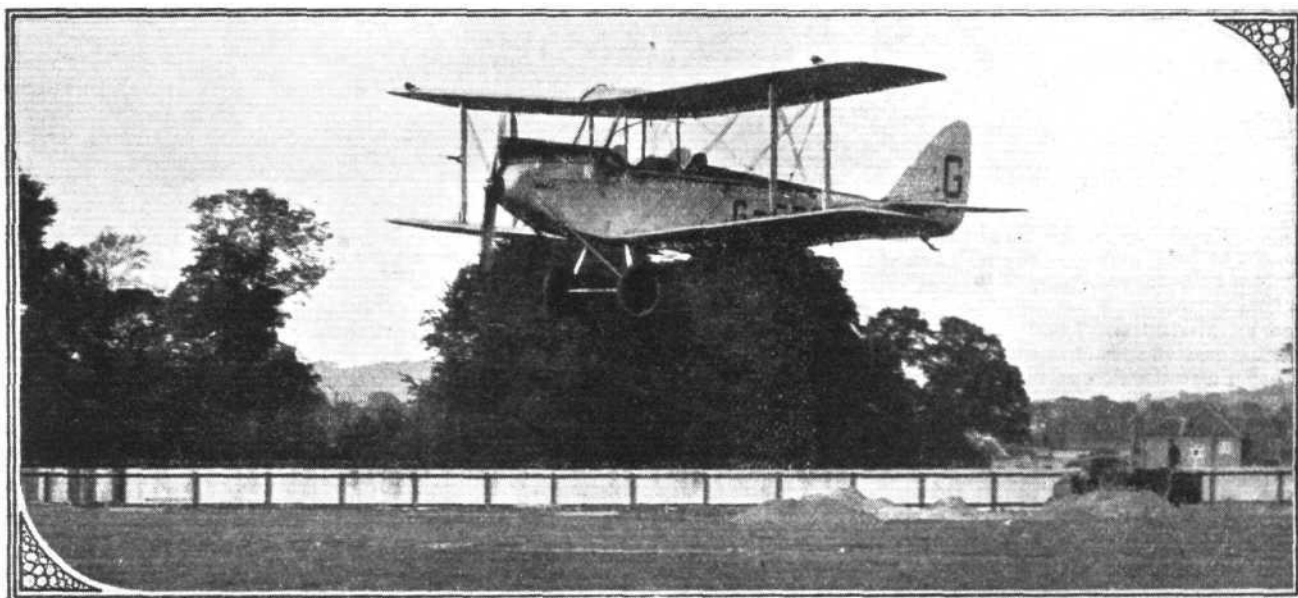
## CAPTAIN H. BROAD MAKES ENDURANCE RECORD

## Twenty-Four Hours in the Air

CAPT. H. BROAD, A.F.C., Test Pilot to the de Havilland Aircraft Co., Ltd., set up a world's endurance record for light aeroplanes on August 16-17 by remaining in the air on a Gipsy-Moth for exactly 24 hours. He could have remained up for about another four hours as out of the

Hinkler made the previous best performance with his 13-hour non-stop flight in the Avro "Avian" (Cirrus) from London to Rome on the first stage of his flight to Australia early this year.

The machine used by Capt. Broad was that in which Capt.



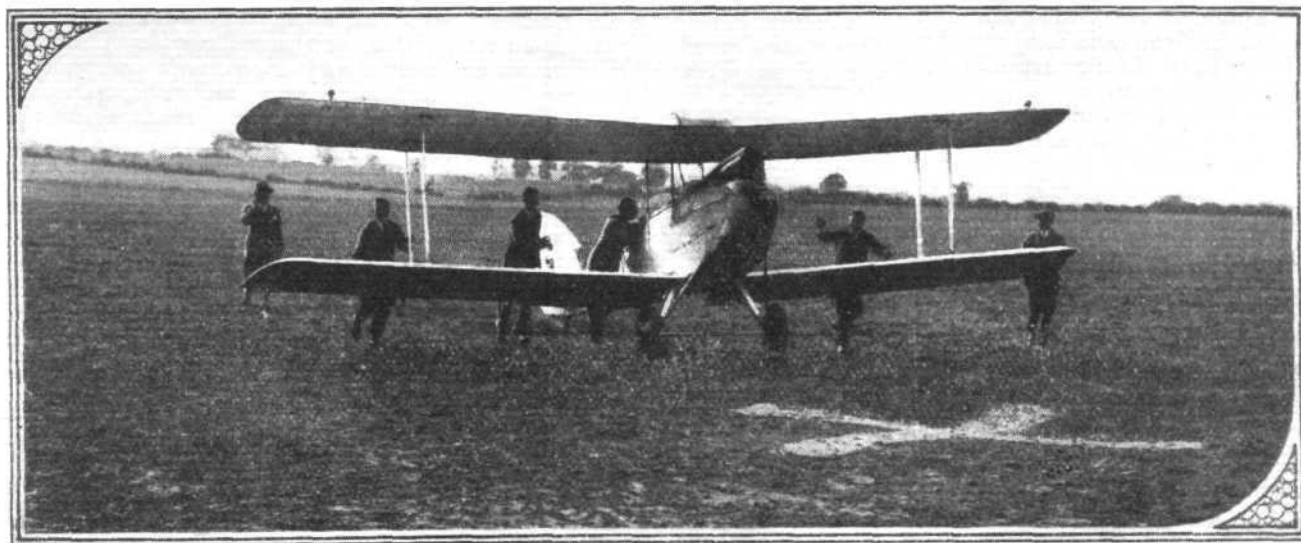
[*"FLIGHT" Photograph*]

Capt. H. Broad bringing down the Gipsy-Moth at Stag Lane aerodrome at 5.30 p.m. on August 17 after a whole day in the air. There was sufficient petrol left for a further 4-hour flight out of the original 80 gallons carried.

original 80 gallons of petrol carried there were 12 gallons left, and the consumption rate was only  $2\frac{3}{4}$  gallons per hour. There is as yet no official record of this class. Mr. "Bert"

G. de Havilland made a light aeroplane (two-seater) altitude record of 21,000 ft. on July 25.

Modifications were effected to increase the petrol capacity



[*"FLIGHT" Photograph*]

The Gipsy-Moth, piloted by Capt. H. Broad, taxiing in on August 17, 24 hours after taking off from the same spot to establish a record duration flight for light aeroplanes.

**Congratulations :**  
Capt. H. Broad,  
on the ground  
again at Stag  
Lane aerodrome,  
after a 24-hour  
record in the air  
with the Gipsy-  
Moth, receives  
congratulations  
from Capt. W. L.  
Hope, who won  
the King's Cup  
this year on the  
same type of  
machine.

("FLIGHT" Photograph)



to 80 gallons, and although this load alone was equivalent to the weight of four men the take-off at 5.30 p.m. on August 16 from Stag Lane aerodrome, Edgware, Middlesex, was quite normal, occupying 13 seconds. At 5.50 p.m. Capt. Broad reached an altitude of 1,000 ft., the airspeed indicator read 65 m.p.h., and the machine was tail heavy. He had a free choice of his route except for a request to keep clear of the areas occupied for the air manoeuvres, and in his wanderings he flew in all directions with London as his centre. At 6.40 p.m. he was over Oxford at 2,000 ft., and over Gloucester an hour later at 2,500 ft., having passed 5 miles north of Swindon.

At 8.30 p.m. he served himself with coffee and sandwiches, and in further wanderings that evening he touched Bristol, Swindon and Maidenhead, whilst at 11.15 p.m. he was back over London at 3,000 ft. watching crowds leave the theatres. At midnight, over Watford, the Croydon lights and the Tatsfield lighthouse were visible, and 50 minutes later Stag Lane was again below.

He chose Chingford at 2.20 a.m. for taking coffee and eggs, saw the first sign of dawn at 4.10 a.m., whilst the ground became distinguishable again at 5.0 a.m. Ten minutes later a bombing machine passed by flying low with all lights on near Biggin Hill. When half of the record had been accomplished at 5.30 a.m., he was south of Maidstone, and an hour later flew along the coast at Margate. Then came Sevenoaks and Northwood, and at 9.10 a.m. the machine appeared over Stag Lane once more.

Capt. A. S. White, A.F.C., Chief Instructor of the de Havilland School of Flying, went up on another D.H. "Moth" to take a peep at him, and thought at first that Broad was asleep, but on approaching to within 10 yards he was seen deeply absorbed in a novel. Capt. White had to make several signals before attracting his attention.

More than two hours later the machine was over Huntingdon, then at Stamford at 12.10 p.m., with Broad feeling very sleepy. Bedford was touched 40 minutes after, and a kite balloon was seen up at Cardington.

The final few hours in the afternoon were spent in wandering to Brooklands, Ipswich and Hertford, the latter spot being left 20 minutes before the landing. Shortly before

5.30 p.m. the machine appeared over Stag Lane aerodrome and circled. Very lights were shot up to let Capt. Broad know that the 24 hours had been completed, and he landed soon after. The landing was perfect.

Despite the strain of the long flight, he was not much affected to any visible extent. He was stiff, but quite able to walk from the machine. Any effect was mostly seen in his eyes, which looked blurred and bloodshot.

He mentioned that he had not been the least cold during the night, and had seen nothing of the air manoeuvres beyond the play of searchlights and the passing of the bomber mentioned. All the morning before the flight he had busied himself with preparations on the machine. Three novels taken to while away the tedium had all been read.

The D.H. "Gipsy" engine ran perfectly throughout the 24 hours. Petrol consumption was  $2\frac{3}{4}$  gallons per hour, and total consumption of oil only  $1\frac{1}{4}$  gallons. After the record the engine was tested and found to be running faultlessly. The performance proved its reliability beyond question, if such was needed after the victory in the King's Cup Race, and the recent altitude record by Capt. de Havilland.

Coming at the beginning of its career, the engine has made a splendid start and augurs well for the future. The production of the "Gipsy-Moth" is about to begin in full swing at Stag Lane aerodrome. There are 120 machines already on order. Of these many will go to private owners, including Lady Bailey, Lieut.-Com. Glen Kidston, Capt. E. Hayes, Capt. J. M. S. Wardell, of the *Daily Express*, Mr. R. W. Johnson, of New York, Sir Pyers-Mostyn, Capt. Halse, Capt. Stroyan, Comte de Sibour, and Mr. R. Malcolm, of the de Havilland Aircraft Co., Ltd. The Basle Aero Club has placed an order.

Mr. A. S. Butler, chairman of the company, already has his own "Gipsy-Moth," and Capt. de Havilland is at present touring with the first of the standard type, which is also his personal property. Capt. H. Broad will fly one at the French International Light Plane meeting at Orly, France, September 10-21.

The A.D.C. "Cirrus" engine will still be fitted to the D.H. "Moths" as desired.

## HARROGATE AIR RALLY

THE Air Rally in connection with the Friend Ship Movement, was held on August 15 at Plumpton Bar Aerodrome, near Harrogate. At 2 p.m., most of the local officials were on the aerodrome, but no machines were there, although an hour before, an Air Force Avro "Avian" had come over to examine an uncharted aerodrome, so it seemed that the landing circle on the field was very clear from above.

After a short time, two machines came in sight from the

south, and proved to be Blackburn "Bluebirds," in which were Mr. Oxley-Boyle and Mr. Charles Blackburn. The latter's machine was caught by a gust of wind, and made a most spectacular "three-point" landing (one wing tip, one wheel and the tail skid) without doing any damage. As the wind was so strong, the machines were pegged down.

Two more machines appeared next, D.H. "Moths," flown by Miss O'Brien and Dr. Murdoch, both with passengers.



Mrs. Knowles, Skipper of the Friend Ship Fellowship, next made a speech, although, unfortunately, owing to the wind, she was hardly heard. A race of three circuits, totalling 18 miles round the district had been scheduled to take place at 3 p.m., but as the organisers had not an absolutely clean permit from the Royal Aero Club, and therefore did not wish to cause the disqualification of any pilot, the race was cancelled, and in its place there was a formation flight round the course.

Bombing the motor dispatch riders, which followed, was a great success, one direct hit being scored, whilst three "bombs" which fell alongside would have certainly blown up the riders had the bombs been real. As everyone became so keen on this event, it continued much longer than had been intended, and even when it was stopped, there was still a considerable number of passengers waiting anxiously with their bombs ready.

Miss O'Brien went up and did a few stunts, one of which was a spin lasting rather longer than many anticipated, and whilst her performance was in progress, one of the disappointed bombers, unable to find a motor cyclist as a target, bombed one of the officials to satisfy his demon desire. A

marker was then sent out to the target, but after the motor cyclists as objectives, it was not so popular, and he came in after half-an-hour.

Ordinary joy-riding took place until the close of the meeting at 8.30 p.m. As there was an insufficient number of machines present to form the intended air show in addition to the flying events this show also had to be abandoned, and thus the extra gate money of sixpence per person, which was the intended charge for the show, was lost, and with it the organiser's profit. They did not do so badly, however, as might have been expected, as there were 3,000 spectators present, a large proportion of whom had paid their first sixpence.

Before he left, Dr. Murdoch gave an exhibition of stalled descents in his slotted D.H. "Moth," which was much appreciated by those who could realise the significance of the display. In the evening, Miss O'Brien landed her machine in Harrogate, where it was pushed into a garage for the night.

According to the programme, the officials on the course included Major J. I. King, Capt. Patterson, Mr. Burns, and Mr. E. T. W. Addyman (Hon. Secretary).

## LIGHT 'PLANE CLUBS

*London Aeroplane Club*, Stag Lane, Edgware, Sec., H. E. Perrin, 3, Clifford Street, London, W.1.  
*Bristol and Wessex Aeroplane Club*, Filton, Gloucester, Secretary, Capt. C. F. G. Crawford, Filton Aerodrome, Patchway.  
*Cinque Ports Flying Club*, Lympne, Hythe, Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.  
*Hampshire Aero Club*, Hamble, Southampton, Secretary, H. J. Harrington, Hamble, Southampton.  
*Lancashire Aero Club*, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.  
*Liverpool and District Aero Club*, Hooton, Cheshire, Hon. Secretary, W. F. Davison, 357, Royal Liver Building, Liverpool.  
*Midland Aero Club*, Castle Bromwich, Birmingham Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

*Newcastle-on-Tyne Aero Club*, Cramlington, Northumberland. Secretary, J. T. Dodds, Cramlington Aerodrome, Northumberland.  
*Norfolk and Norwich Aero Club*, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.  
*Nottingham Aero Club*, Hucknall, Nottingham, Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria St., Nottingham.  
*The Scottish Flying Club*, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.  
*Southern Aero Club*, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.  
*Suffolk Aeroplane Club*, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.  
*Yorkshire Aeroplane Club*, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

### BRISTOL & WESSEX AEROPLANE CLUB, LTD.

TOTAL flying hours for week ending August 18, 33 hrs. 15 mins.

Our ground engineer has been on holiday for most of the week, and TV has been at Stag Lane, so this total is most satisfactory. Mr. Savage, of the A.I.D., has voluntarily given his spare time to inspecting and signing out machines, and all members have given willing assistance in keeping the Club open.

Messrs. T. H. Clarke and Lynas passed their R.Ae. Club tests on Friday evening. They both achieved excellent landings and perfect figures of eight.

### CINQUE PORTS FLYING CLUB

REPORT for week ending Saturday, August 18.—Machine:—de Havilland Moth G-EBSS; total time, 9 hrs. 35 mins.; test flights, 20 mins.; special journey, 20 mins.; joyride (with Major Clarke), one, 10 mins.; dual instruction (with Major Clarke):—Mr. Weavege-Smith, 1 hr. 45 mins.; Mr. Skinner, 1 hr.; Mr. Smith, 1 hr.; Mr. Sargent, 1 hr. 30 mins.; Mr. Swinnard, 30 mins.; Mr. Parkes, 30 mins.; Mr. Martin, 45 mins. Total, 7 hrs.

Soloists under instruction:—Mr. Skinner, 45 mins. Mr. West, 15 mins.

"A" Pilots:—Mr. Douglas, 30 mins.; Mr. Wright, 15 mins.

On Friday, July 17, one of our members from Ashford, Mr. Skinner, did a successful first solo after 7 hrs. 30 mins.' dual instruction. He again flew

solo the following day, putting up a very good performance, and we hope that he will shortly be taking his tests for his "A" licence.

On Saturday, August 18, at the request of the Kent Motor Club, Major Clarke flew the machine over the Devil's Kneading Trough at Wye, where the Club was holding a hill climb. Unfortunately, the engine was not in a specially good condition, so that Major Clarke's exhibition was not as exciting as it might have been, owing to the need for exercising particular care.

The machine will not be available during the week August 19 to 25, as it has to go to the factory for renewal of its certificate of air worthiness. We hope to have it back early the following week.

### HAMPSHIRE AEROPLANE CLUB

RETURN for week ending Friday, August 17.—Total flying time, 27 hrs. 40 mins. Dual instruction, 15 hrs. 10 mins. "A" pilots, 5 hrs. 30 mins. Solo, 1 hr. 5 mins. Passenger flights, 4 hrs. 40 mins. Tests, 1 hr. 15 mins.

Instruction with Mr. W. H. Dudley:—Cdr. Hunt, Mr. Reuther, Mr. Grahame Gibbs, Mr. Curtis Nuthall, Mr. Brewster, Mr. Martin, Mr. Buckley, Mr. Ashford, Mr. Turner, Mrs. Gibbs, Dr. Bowden, Miss Home, Mr. Berney, Mr. Endacott, Mr. Campbell, Mr. Des Graz, Mr. Snowden, Mr. Falconar, Cdr. Bell, Mr. Redwood, Mr. Mattocks, Mr. Sturge, Cdr. Creswell, Mr. Southcliffe, Cdr. Tower, Lt. Collier.



Photo: Allied Newspapers

**AVIANS "EX WORKS."**—A batch of Cirrus-Avians at Woodford ready for collection. It will be seen that the one nearest the camera bears Spanish registration marks. The Spanish agent finds it quicker and cheaper to fly his Avians to Spain than to ship them.!

"A" Pilots:—Capt. Kirby, Mr. Sanders Clark, Lt. Heinemann, Miss Grace, Mr. Falconar, P/O. Leech, Mr. Rayson, Mr. Hoare. Soloists:—Mr. Sturge, Cdr. Tower.

Passengers:—Mr. Wilkins, Mrs. Crook, Mrs. Caddy, Mrs. Harrington, Miss Drury, Mrs. Jacka, Mr. Jordan, Mr. Abbott, Mrs. Creswell, Mrs. Baker. The Club renewed its customary activities on Tuesday, the 14th inst., after being closed for 10 days for the summer holidays. On Thursday, a number of Members attended the opening meeting of the new Isle of Purbeck Light Aeroplane Club, at Worth Matravers. Capt. Kirby flew over in one of the Club "Moths." Mr. Simmonds attended with his "Spartan" machine which, as usual, aroused a great deal of interest, and the pilot, F/Lt. Banting, was kept busy giving joy flights. F/O. Saman kept the crowd interested with some remarkable stunting on a Genet "Moth." We wish Colonel Strange and the new Club every success.

#### ISLE OF PURBECK LIGHT AEROPLANE CLUB

REPORT for week ending August 18.—If the clerk of the weather favours us generally, as he did on our opening day last Thursday, we shall have no cause for complaint. Flying started at 10.30 a.m., when Mr. Banting took up a member in the "Simmonds Spartan," which was seldom on the ground for the rest of the day. About 2.30 p.m. our two visitors arrived—Flying Officer Seaman on a R.A.F. "Genet" Moth, and Capt. Kirby, with Mr. Berney, on a "Cirrus" Moth of the Hampshire Club. By this time there were about a thousand people in and around the aerodrome, and at 3 o'clock they were treated to a fine display of aerobatics by Mr. Seaman. Flying went on continuously until 6 p.m., and the day was voted a great success. All who flew were greatly impressed by the marvellous views over the Isle of Purbeck, whilst the value of aircraft in agriculture was remarked upon by not a few.

The "Spartan," with its exceedingly valuable interchangeable features, was naturally the centre of interest, and those who could appreciate fine points all agreed that the chassis of this machine is something really exceptional. It seems almost impossible to leave the ground once the wheels touch, and she pulls up in an extraordinary short distance. Our instructor says she is the most delightful machine he has ever flown and is very easy to land.

As to membership, our strength now stands at 47 pilot members, 43 observers and 37 associates. One member has already come forward with a definite order for a "Simmonds Spartan," which he has agreed to loan to the club in return for part care, maintenance and instruction. Next week we are fetching General Branker, on Thursday, the 23rd inst., in the "Spartan" to speak at the inaugural meeting of the Dorsetshire Aero Club, at which it is hoped to form a headquarters and three other branches similar to our own. The meeting takes place at noon at the Town Hall, Dorchester, and all who are interested are invited to be present. We are pleased to welcome Flying Officer H. W. R. Banting, R.A.F.O., who has been appointed chief instructor, and Mr. Vaisey, recently of the London Club, who takes over the engineering side. In them the club is assured of a keen and capable staff.

#### LIVERPOOL & DISTRICT AERO CLUB

REPORT for week ending Sunday, August 18.—Total time flown for week, 34 hrs. 40 mins.; dual, 28 hrs. 50 mins.; solo, 5 hrs. 50 mins.

Dual (with Lieut. Bentley):—Mrs. Vernon, Mrs. Naylor, Miss Hackforth, Miss Hill, Messrs. Naylor, Compan, Moulds, E. H. Williamson, Thornton, Barber, Barker, Henderson, Alcock, Wilcox, Edgar, Greenhalgh, Keniston.

Dual (with Lieut. Allan):—Miss Hill, Mr. Eills.

Pilots:—Messrs. Crosthwaite, Davison, Leete, Ward. Soloists:—Messrs. Benson, McClure, Thornton. Joy rides (with Lieut. Allan):—Miss Monds-dale. Joy rides (with Mr. Davison):—Miss Read, Mr. Gamon, Mrs. Barker (With Mr. Crosthwaite):—Mr. Browning. (With Mr. Ward):—Miss Hackforth. Messrs. Lacayo, Goodfellow and Mills, of the Lancs. Club, also flew.

On Thursday, we were visited by Sir Sefton Branker and Sir Alan Cobham en route for Belfast, in G-EDCA. Our visitors were investigating the possibility of a Liverpool-Belfast Airline. One understands that influential parties are keenly interested and that developments may be expected in the near future. Notwithstanding our very broad hints, nay, demands for a thousand or two subsidy in recognition of our efforts, our visitors were brave enough to return on Sunday, staying overnight and making a very early start for London on Monday morning. Mr. Cooper, in his "Moth" M.U. also paid us a visit on Sunday. Mr. Thornton was launched on Sunday evening, and put up a very good show indeed. We now have a clubhouse (and bar) on the Aerodrome, and one hears talk of a "Stretchers-at-Three" party to celebrate. Several of our Lancashire Club friends paid us a visit on Sunday evening. Fortunately, the bar was open.

#### MIDLAND AERO CLUB LIMITED

REPORT for fortnight ending August 18.—Total flying time was 62 hrs. 47 mins. Dual, 32 hrs. 27 mins. Solo, 16 hrs. 14 mins. Passenger, 12 hrs. 21 mins. Tests, 1 hr. 45 mins.

Following members were given dual instruction (by F/Lt. T. Rose, D.F.C., and Mr. W. H. Sutcliffe):—T. H. Drury, L. H. Le, C. T. Davis, F. J. Steward, J. B. Briggs, H. Coleman, E. M. Morris, E. L. Hulme, G. C. Jones, J. Lewis, J. R. Guthrie, J. Cobb, R. B. Laidlaw, R. G. Welch, E. N. Khatri, J. W. Astley, M. A. Murtagh, T. W. Wild, J. Risdale, Dr. W. G. Tilleke.

Solo:—W. M. Morris, E. L. Hulme, J. Cobb, C. W. Fellowes, G. Savage, J. R. Guthrie, R. C. Baxter, M. A. Murtagh, E. J. Brighton, G. C. Jones, R. L. Jackson, R. D. Bednell, E. P. Lane, T. H. Drury, E. R. King, W. Swann, S. H. Smith, G. Robson, J. Rowley, H. J. Lattey, L. H. Lee.

Passenger flights were given to 10 members:—Messrs. J. R. Guthrie, L. H. Lee, J. B. Briggs and T. H. Drury successfully made first solo flights. F/Lt. Rose flew XT to Stag Lane, and had the new split undercarriage fitted. This is a very great improvement.

Through the courtesy of Messrs. A. D. C. Aircraft, Ltd., the services have been obtained of Mr. V. J. Neyle during the absence of our engineer, Mr. Halland, who is on holiday.

#### NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending August 18.—Total flying time, 29 hrs. 20 mins. Instruction, 15 hrs. 55 mins. "A" Pilots, 6 hrs. 35 mins. Passengers, 6 hrs. 15 mins. Tests, 35 mins.

Instruction (with Mr. J. D. Parkinson):—Mrs. Kish, Miss Vendall, Miss Forster. Messrs. Middleton, Forster, A. H. Sadler, S. E. Sadler, Milburn, Alton, Griffiths, Runciman, Hayton, Temple, Walker, F. M. Hall, Dr. Alderson, Dr. Walker. "A" Pilots:—Mrs. Heslop, Messrs. H. Ellis, Horn, Irving, C. Thompson, R. N. Thompson, Turnbull, Wilson, Dr. Alderson.

During the week we were visited by Capt. Muir, of Surrey Flying Services, on a D.H.9. Mr. Holman on a new slotted "Moth" ZO, called, and his demonstration on taking-off was greatly appreciated by the members.

A large crowd turned up last Thursday to welcome Mr. Rawson on the Autogiro, but as he was some hours late, most of the spectators had departed before he arrived. It transpired that the undercarriage of the machine suffered damage at Howden, and unfortunately Mr. Rawson was unable to give a demonstration, however, he proceeded to Renfrew, where the necessary repairs were to be effected, and we hope to see him again on his return south.

#### NORFOLK & NORWICH AERO CLUB

REPORT for week ending August 19.—Total flying time, 36 hrs. Dual with Mr. Young: Mrs. Cator, Messrs. H. Wharton, C. Ransome, R. Wright, H. M. Smith, A. Kirkby, E. Harvey, H. Neave, C. Rope, F. Rinder, W. Harvey, H. Meadows, C. Land. Soloists: Mrs. Cator, Messrs. E. Varden Smith, F. Gough, C. Gowing, R. Potter, A. G. Marshall, C. C. White, R. Harmer, A. Richardson, H. Cator, N. Brett, E. Lambert. Passengers, 32.

Our heartiest congratulations to Mrs. Cator on her first solo this week, which was a real fine show. Mrs. Cator is the wife of our vice-chairman, Capt. H. J. Cator, M.C., and we are very glad she has gone off and in such splendid time too. Capt. Cator himself has only this week completed his "A" licence tests, so there should be "Dual" "A" licences in that family shortly.

On Saturday evening at 6 p.m. we had three aeroplanes, on Sunday at the same time we had two. Members don't like the Club with three so one of them threw the Avian on the deck with rather more force than necessary. Fortunately he was not hurt very much himself, although quite bothered over the wreckage. So are we! However, these things will happen in the best regulated families so it appears.

#### NOTTINGHAM AERO CLUB

REPORT for week ending August 17.—Flying time, 32 hrs. 45 mins. Instruction, 9 hrs. 40 mins.; "A" pilots, 5 hrs. 50 mins.; solo (under instruction), 12 hrs. 50 mins.; passengers, 3 hrs. 5 mins.; tests, 1 hr. 20 mins.

Instruction (with Mr. Martin):—Messrs. Thorpe, Thirby, Chawla, Stevenson, Calladine, Hutchinson, Hancock, Winn, and Lazzarini.

Solo "A" Licence:—Messrs. Cox, Paul, Granger, Blake, Sands, Pilgrim, Bradley and Selvey.

Solo (under instruction):—Messrs. Taylor, Glenn, Hatton, Chawla, Calladine and Winn.

Passengers:—Messrs. Archer, Dennis, Rushworth, Batty Brothers, Kay, Iles, T. Hancock, T. R. Hancock, F. T. Hancock, Pringle, Linsley and Cudlip.

Notes.—During the early part of the week, the weather has been very rough, but we have been able to allow Messrs. Calladine and Winn to juggle with death for their first time solo. Both made excellent landings and are to be congratulated; also Messrs. Bradley and Selvey for getting their "A" tickets; and Mr. Taylor for obtaining his R.A.C. ticket. Capt. Tait-Cox is still sky-writing (in our office) and "Fred" still flies to the tune of "Ole Man River." Our first funny story. Who was the Squadron Leader who mistook an S.E.5.A. for a D.H.9a?

#### SUFFOLK & EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending August 18.—Flying time, 20 hrs. 5 mins. Instruction, 14 hrs. 25 mins. "A & B" pilots, 1 hr. 25 mins. Passenger flights, 4 hrs. Tests, 15 mins.

Instruction with Mr. Lowdell:—Miss Rhodes, Dr. Mildred Yate, Messrs. Goodwin, Hanson, Wedd, T. and B. F. Marriage, Ogilvie, Pettward, Croydon, Billinton, Brown, Jolly.

"A and B" Pilots: Dr. J. C. Sleight and Mr. C. N. Prentice.

Passengers with Mr. Lowdell, 10; with Mr. Prentice, 4. There have been no reports from Hadleigh during the last few weeks as the club was closed down, while Mr. Lowdell went to Stag Lane for reserve training and the machines went to Brough for repairs.

We are, however, in full swing once again and a number of new pilot members have started their course of instruction.

On Friday the club is holding a Display at Clacton in conjunction with the Friendship Fellowship.

#### YORKSHIRE AEROPLANE CLUB

REPORT for week ending August 18.—Flying time, 26 hrs. 50 mins. Dual, —9 hrs. 40 mins. Solo, 14 hrs. 15 mins. Passengers, 2 hrs. 55 mins. Instruction (with Capt. Beck):—Miss Ellison, Messrs. Parks, Evans, A. Senior, G. Senior, Brodie, Lloyd, Brown, G. Thompson, Swift, Bamford, Jackson, Gill, Dujardin, Watson, Palmer Ellison.

"A" Licence Pilots:—Messrs. Thomson, Ellison, Lax, Clayton, Wood, Ambler, Birch, A. Crowther, H. Crowther, Humpheries, Norway, D. Atchley. Passengers, 18.

On Wednesday, Mr. A. C. H. A. Rawson arrived in the Autogiro, and made a nearly vertical approach from 1,200 ft. Two demonstration flights were given to Messrs. Clayton and Birch, and Mr. Rawson departed for Howden, on Thursday. One of our members, when interviewed by an eager pressman for his views on the machine, simply remarked, "I refuse to believe it."

On Saturday, the Wayman Bowl was presented by Mrs. Wayman. Mr. Ivo Thomson, for having put in 103 hours solo flying between July, 1927 and July, 1928. The bowl was not filled, as it would only hold about a gallon, a negligible quantity where our flying members are concerned.

#### FROM THE FLYING SCHOOLS

##### Henderson Flying School, Limited.

REPORT for the week ending August 16.—Total flying time, 32 hrs. 35 mins. Dual with Col. Henderson: Messrs. Stewart, Moursi, Elton, Matos. Dual with Capt. Davis: Messrs. Du Cane, Daniels, Dr. Taylor, Courtney-Banks, Dr. Shields, Austin, Groner, Moursi, Robertson, Lewis, Bennett, Matos, Leigh, Hamilton, Dr. Forsyth, Mrs. Scott, Mrs. Monkton, Miss Kidston. Dual with Capt. Davenport: Messrs. Soames, Guinness, Du Cane, Dr. Shields, Dr. Forsyth. Solo: Messrs. Robertson, Daniels, Du Cane, Oliver, Stewart, Knox, Groner, Miss Kidston.

The flying time has been cut down considerably owing to those dud days, but much good work has been put in. Mr. Robertson took his ticket in great style. He is certainly one of the best pupils the school has turned out this year. Miss Kidston, Stewart and Matos were seen on their first solos. Early morning flying is still very popular, and there is a general fight to be the first in the air. Col. Henderson and Mr. Anderson flew to Ireland in G-EBWJ and left Brooklands in typical "Henderson" weather—rain and a gale of wind.

#### OVERSEAS CLUBS

##### SOUTH AFRICAN CLUB NOTES

MR. FIDDIAN GREEN, publicity secretary of the Port Elizabeth Light Aeroplane Club, Ltd., South Africa, writes on July 18:—"During the last week-end the club had a visit from a private owner, Mr. Hollingdrake, who flies an Avro 'Avian' G-EBTP. Mr. Hollingdrake flew here from Cape Town, and on Sunday assisted us in taking up passengers for joy flights. We had our two machines in the air as well and we were kept busy all day. During the course of the day Mr. Hollingdrake gave a remarkable exhibition of crazy flying, which was much appreciated by all. Now that the "Moth" G-UAAA is in flying trim again instruction is proceeding, and dual was given to Messrs. Howse, Paterson, Tuckett and Fiddian Green. We are pleased to welcome back Mr. B. C. Gibaud, who has been in England for several months. Mr. Gibaud, who obtained his 'A' licence at the Bristol and Wessex Club, was a war pilot."

Mr. Fiddian Green has prepared an interesting and original leaflet setting forth complete information about the club in the form of a conversation with a would-be member.



## THE ORLY LIGHT 'PLANE MEETING

### 25 Machines Entered

IN our issue of August 2 we published a summary of the rules and regulations governing the International Light 'Plane Competition which is to be held at Orly aerodrome, near Paris, from September 10 to September 21. We have now received from the French Aerial Association (*l'Association Française Aérienne*) a list of the machines entered, and as the entries closed at 6 p.m. on August 11, no more entries will be accepted, so that the following list may be regarded as being complete. Of the 25 machines entered, 16 are French, 6 English, and 3 German. The machines have been numbered in the order in which the entries were received, and will carry these numbers in the competition.

Following is the list of entrants:—

1. Société pour le Développement de l'Aviation (France).
2. Eric Nessler (France).
3. René Caudron (France).
4. René Caudron (France).
5. René Caudron (France).
6. René Caudron (France).
7. Pierre Meuboussin (France).
8. Carl Sönning (Germany).
9. Leichtflugzeugbau Klemm (Germany).
10. Avions Légers Guerschais (France).

11. The Felixstowe Aero Club (Great Britain).
12. Richard R. Bentley (Great Britain).
13. Société des Avions Albert (France).
14. Société des Avions Albert (France).
15. Charles Favre (France).
16. Baron Paul Pérignon (France).
17. Bäumer Aero G.m.b.H. (Germany).
18. Capt. E. W. Percival (Great Britain).
19. Thomas Neville Stack (Great Britain).
20. De Havilland Aircraft Co., Ltd. (Great Britain).
21. René Leduc (France).
22. Assurances Syndicales de Toulouse (France).
23. Société Airéau (France).
24. Louis Peyret (France).
25. Lady Heath (Great Britain).

The British machines will include "Cirrus-Avians," "Cirrus-Moths," and a "Gipsy Moth." Among the pilots who will compete will be Maurice Finat, Nessler, Magnard, Albert, Lemoine, Deckert, Avignon, Brabant, Broad, Bentley, Stack, Comper, and Lady Heath.

Competing machines must be at Orly aerodrome before 3 p.m. on Sunday, September 9, and the actual competition starts the next day.

### East African Flying

COMMANDER L. MANSFIELD ROBINSON, accompanied by Mr. Graham Dawson, flew from Nairobi to Nanyuki, on June 23, in a D.H. "Moth" aeroplane on a short fishing expedition.

The machine left Nairobi at 8.55 a.m. and approached Nyeri above the clouds at a height of 11,000 ft. (above sea level). Both Mr. Graham Dawson and the pilot stated that there was a wonderful view of the peaks of Kenya and the Aberdare Range standing up out of masses of white clouds below and with a background of vivid blue sky behind. Through the courtesy of Mr. Bobby of the Nanyuki Polo Club, a smudge fire was burning on the polo ground on which a landing was to be made, and this was clearly seen from a distance of several miles. The wind was inclined to be gusty, but a good landing was made at 10.15 a.m. The ground was found to be in excellent condition.

Commander and Mrs. Hook entertained the visitors, who managed to obtain some four hours' fishing as the result of which a fine basket of trout was packed away in the locker of the machine prior to the commencement of the return journey. After lunch with Commander and Mrs. Hook and Captain Kenealy, the machine took off again at 3.5 p.m., and a landing was made at Nyeri at 3.35 p.m.

There, again, the polo ground was found to make an excellent aerodrome for light 'planes. Tea was provided by the members of the club and the visitors then waited to watch one chukker of polo after which the machine took off at 4.5 p.m. Nairobi was reached shortly after 5.0 p.m. in time to allow the passengers in the machine to have a game of tennis before dark, and to be present at the closing performance of the "Gondoliers" in the evening.

It is understood that Mr. T. A. Wood who, many years ago gave £50 towards the cost of importing trout spawn made his first meal of these delightful fish in Nairobi as a result of that trip.

### Lieut. L. G. Richardson's Tour

THE following is Lieut. L. G. Richardson's (R.N.) description of his present tour in his D.H. "Moth," with his brother, Mr. E. W. A. Richardson as passenger:—

"We left Lympne on August 3 and arrived at Ostend in 1½ hours, where we stayed the night. The next day Cologne was reached in 2½ hours through patches of very bad weather with low cloud and rain. Filled up with petrol and reached Mainz in 1 hr. 40 mins. Here we were the guests of the Royal Welch Fusiliers stationed at Wiesbaden. Shortly after landing at the latter place a terrific thunderstorm came down the Rhine Valley, bringing torrential rain, and hailstones 1 in. in diameter. On the fifth evening, we flew to Frankfurt (30 mins), so that we could make an early start and obtain weather reports, etc., for Berlin the next morning. On August 6 Brunswick was reached in 2½ hrs. and Berlin in 1 hr. 35 mins. The next morning, as we were setting off for Copenhagen, we met another 'Moth' owner, a Polish

gentleman—M. Skorzewski—who suggested we should accompany him to Poland for a day or two, as the weather forecasts to the northward were unfavourable for the next 48 hours. We adjusted our plans accordingly, and reached his home near Posen with a strong west wind in 1½ hrs. Here we were royally entertained by him and his friends for two days in the country.

"On August 9 the wind was still blowing strong from west, and we reached Swinemünde in 3 hrs., Warnemünde in 2 hrs., thence across sea to Copenhagen in 1 hr. 45 mins. On August 13 we go to Oslo for several days, thence back via Copenhagen, Hamburg, Amsterdam and Ostend."

### Blackpool Air Pageant Loss

THE Blackpool Council was informed that a very considerable loss had been entailed in the holding of the recent air meeting at Squire's Gate, Blackpool.

### Private Owner's Aerial Picnic

AT his private aerodrome at Bokesbourne, near Canterbury, Dr. Whithead Reid, who owns a Westland Widgeon II, recently gave an aerial picnic, in which six machines belonging to 601 Squadron played a part. The guests were afterwards entertained by Dr. and Mrs. Whitehead Reid.

### Indian Flying Clubs

IT is understood that eight light aeroplane clubs will be established in India during the coming year at centres including Karachi, Bombay, Delhi and Calcutta. In accordance with an arrangement with the Government of India, there are now being trained at the De Havilland School of Flying, London, ten Indian pupils, some of whom it is expected will become instructors at the new Indian clubs.

### Seaplane Tour

COL. THE MASTER OF SEMPILL and the Hon. Mrs. Forbes Sempill landed in a Blackburn "Bluebird" seaplane on Aberdeen Harbour late at night on August 14. They had left Westminster some days previously and flown over the East coast, landing to re-fuel at various places. Entering Scotland near Peebles, they continued their journey to Inveraray, then headed for the Island of Bute and landed at Mount Stuart. From there Col. Sempill flew Lord Patrick Crichton-Stuart to Gourrock, whilst Mrs. Sempill went by steamer and motor. Later the same day the seaplane arrived at Loch Lomond, where their landing was the first made by a seaplane on the loch.

### Aerodromes of England Maps—a Transposition

OWING to carelessness on the printer's part the maps of the proposed Blackpool and Skegness Municipal aerodromes published on page 707, under Private Flying, in last week's issue of FLIGHT, were unfortunately transposed. By reversing the inscriptions the maps will then be clear.

### Irish Aero Club

Two machines have been purchased by members of the newly formed Irish Aero Club. One of them is for two members of the committee, and the other has been bought by another member, Mr. Mitchell. Membership is now 200.

# “A FLYING SCHOOLHOUSE”

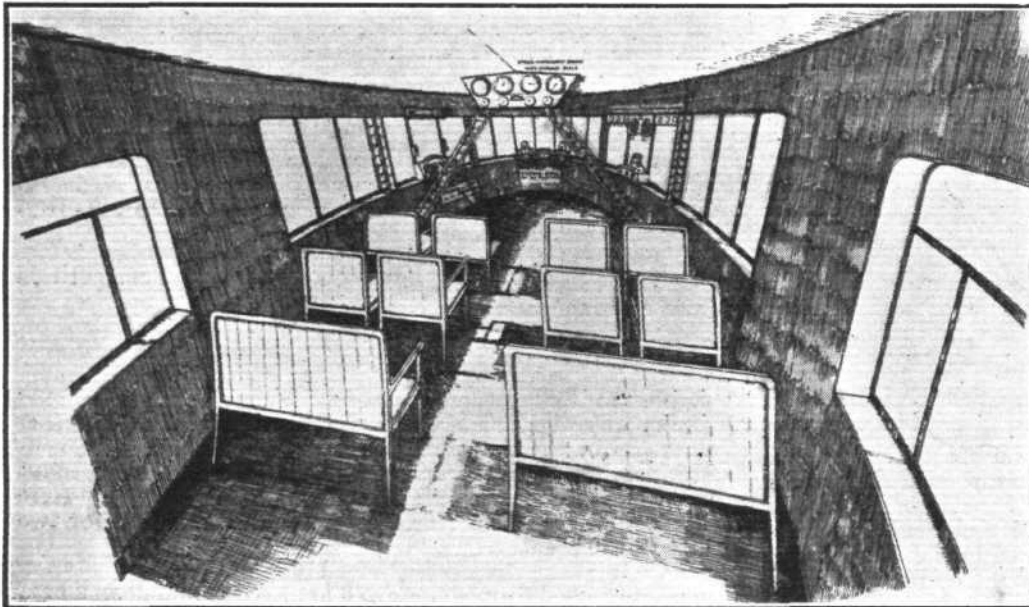
## A Proposed Training Airship for Lighter-than-Air Crews

THE following article, by Walter E. Burton, appeared in a recent issue of our American contemporary *Aviation*, and will we think, be of considerable interest to those of our readers who follow airship development.

A “flying schoolhouse” for the training of future airship crews has been designed by the engineering staff of the Goodyear-Zeppelin Corp., of Akron, O., as one of the steps in the preparation for the day when dirigibles will be one of the

65 m.p.h. It is not intended for long distance flying, although it is stated that it could be quickly remodelled into a military ship for coast patrolling or other duties in event of a national emergency.

A new type of girder construction, producing greater thickness of cross-sections and giving added strength against possible corrosion, local damage, and high stresses, has been worked out in connection with the planning of the training



**A Flying Schoolhouse :**  
A sketch of the Class-  
room in the proposed  
Goodyear-Zeppelin air-  
ship, for training  
military and commer-  
cial airship crews.

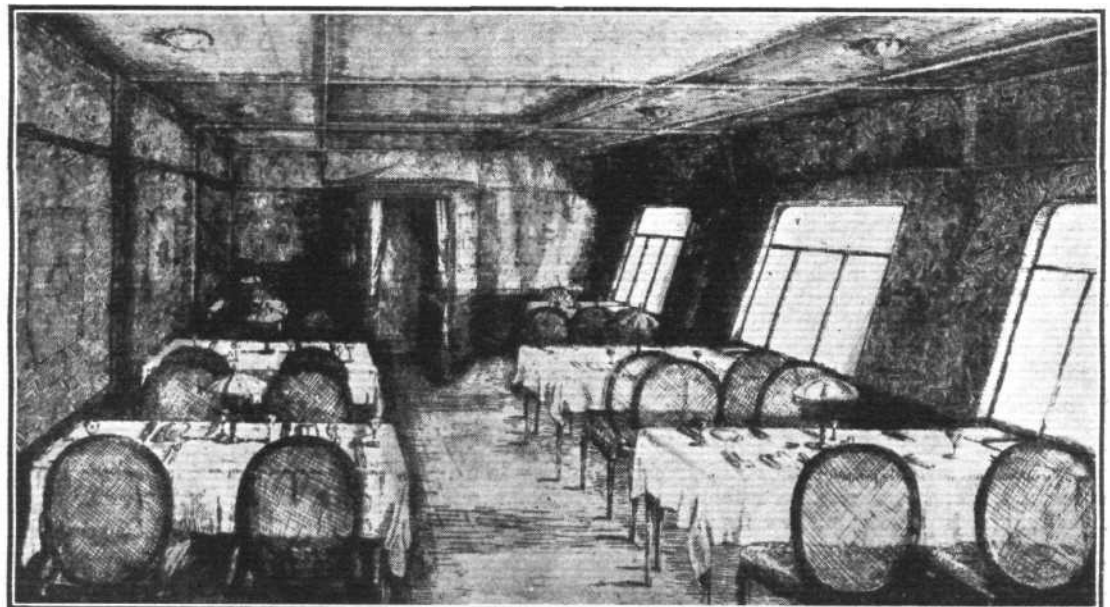
principal means of swift transportation of passengers and freight.

The proposed training ship will be suitable for the preparation of either military or commercial dirigible crews. It will be about a third the size of the “Los Angeles” and can be filled with either helium or hydrogen gas. A double cabin will be provided. The forward portion of this will be occupied by the ship’s navigators, while the rear section will

ship. Internal corridors will make all parts of the craft accessible during flight. A fabric outer cover, coated with an aluminium preparation or paint, will be fireproof, weather-proof, and resistant to such local stresses as would be caused by hailstones and minor accidents.

The designers of the proposed training ship point out that, in the operation of the dirigible, there is no substitute for actual experience any more than there is in the operating

**A Flying School-  
house :** A sketch  
of the Messroom  
of the Goodyear-  
Zeppelin training  
airship.



be the principal classroom, with desks for sixteen to eighteen students. Large instrument dials, visible from all parts of the classroom will enable students to follow every movement in connection with the navigation of the ship, and the reaction of the craft to various conditions.

The training dirigible, while comparatively inexpensive, will be large and fast enough to afford navigating experience identical with that obtained on a full-sized craft. It will have a maximum speed of about 80 m.p.h., and a cruising speed of

of an ocean steamship or other large craft. Students of airship operation must have, of course, a complete theoretical knowledge of the problems of balance, buoyancy, ballast, power, fuel, meteorology, landing technique and the like ; but this must be backed by actual experience before the training can be considered complete.

Such training is a progressive process. It begins first in the classroom on the ground, where the fundamentals of flying are taught. The student next gets his first air experience



in a free balloon. Following this comes the little blimps which provide experience with gas-filled craft driven by a motor and guided by rudders. Finally, the training ship will provide the finishing touches to the thorough training necessary for the safe and efficient operation of a giant air liner, such as the Los Angeles or the proposed super-dirigibles. The training dirigible is intended to provide facilities for training work in America similar to that pursued in Germany before the World War.

When Count Zeppelin conceived the idea of establishing regular airship service between Germany and America, across the Atlantic—a plan which was interrupted by the World War—he realised the necessity of highly-trained crews for the operation of the ships.

Accordingly, Dr. Hugo Eckener, head of Delag, the commercial airship subsidiary of the Zeppelin Corporation, conducted a school in theoretical flying, supplemented by actual air experience. This was in 1912. The procedure was somewhat as follows:

Dr. Eckener summons a cadet commander. "You will take the ship Z-17 from Freiderichshafen to New York, starting as of March 4, 1905," he orders.

The cadet commander immediately assembles his student crew, and begins a detailed study of weather conditions exist-

ing over the North Atlantic during March 4, 5 and 6, 1905. Count Zeppelin, in his elaborate preparations for trans-Atlantic flying, had set a group of men to work collecting weather data along the proposed route over a period of twenty-five years. Logs of about 1,000 ships and records of weather bureaus in America and Europe provided the information sought. So when the student commander and his crew assembled in a closed class room for the theoretical flight, they knew pretty well what weather would have been encountered in a flight starting March, 4, 1905.

The future Zeppelin operators remained in their imaginary airship quarters during the entire "voyage," standing regular watches and performing other duties which would have been encountered on such trip. Their meals were sent to them.

Over 1,000 theoretical flights were made in this manner from Friedrichshafen to New York and return before war came. Graduate airship captains as well as students took such training, in preparation for what was expected to come.

This illustrates the manner in which commanders of air liners of the future will be schooled in the details of proper dirigible navigation. Although no immediate provision for the building of a training airship has been made, the designers are confident that such craft will come into general use within a comparatively few years.



## AIRISMS FROM THE FOUR WINDS.

### Great Flying-Boat Cruise

THE four R.A.F. Supermarine-Napier "Southampton" flying boats under the command of Wing-Comdr. Cave-Browne-Cave, engaged on the Australian cruise, left Brisbane on August 18 for Singapore, flying via Gladstone, Bowen, Cookstown, and Thursday Island.

### Dutch Indies Service

THE first of the four three-engined Fokker 'planes, which will be flown to the Dutch Indies in the autumn, in order to be put into service on the lines of the Nederlandsch Indische Luchtvaart Maatschappij (the N.I.L.M.) is now being tested by Lieutenant Koppen, who a short time back made a record-breaking flight of 18,000 miles in twenty days on the same type of machine. The four three-engined Fokker 'planes are of the normal type F.VII 3 m. Each machine is equipped with three Armstrong-Siddeley "Lynx" engines of the improved type, giving 230 h.p. at 2,090 revolutions. There is accommodation for eight passengers and a petrol capacity of 275 gallons. An important improvement is a wheel-brake, which can be operated by hand and reduces the running

distance of the machine when landing by at least one-half. As the machines are intended for service in tropical countries, the metal parts of the engines have been specially treated, while the wooden wings have been provided with a triple coat of varnish.

### Cape Town-London Flight

ON his return flight to England, Flying Officer P. Murdoch left Cape Town on August 14, reached Beaufort West, and left again for Pretoria about an hour later. He was obliged to make a forced landing *en route*, and a night was spent at Bloemfontein. On August 18 he arrived at Pretoria, where his machine, an Avro "Avian" (Cirrus), is being overhauled for a record flight to England.

### Lady Bailey to Fly to England

AS the sanction of the Sudan authorities granting Lady Bailey permission to fly solo over that territory is not forthcoming, Lady Bailey will in all probability try the West Coast route, and is consulting with four Belgian airmen at Johannesburg, who have just completed a car trip down Africa, surveying new Belgian air routes and landing-places.



When a customer demanded a Morris Six Coupe immediately Mr. A. G. Wilson, of Leeds, flew to Oxford in this Blackburn "Bluebird" from Sherburn, Yorkshire, and delivered the car in Leeds by the evening, earlier than promised.

### South Atlantic Air Line

LIEUT.-COL. HERRERA, a promoter of the Seville-Buenos Aires airship scheme, and Don Jorge Loring, the company's engineer, have been in Germany inspecting the dirigible which is being constructed to the order of the Spanish company. They then visited Italy in connection with a proposed order for a smaller airship of the size of the "Italia" for service between Spain and the Canary Islands. The airship being built in Germany is expected in Spain in September, and is likely to make a trial flight round the world before being placed on the South Atlantic service.

### Aircraft for Sardine Spotting

AEROPLANES have been very successful in finding schools of sardines and in enticing others to a suitable spot by dropping bait in the sea and then wirelessly to fishing vessels. It is said that several French sardine-catching companies already use this system, but one difficulty apparently is finding a market for the fish. Thousands of tons were abandoned last year because they could not be sold profitably. According to pilots engaged in this work, schools of sardines can be seen for a distance of 20 miles from a height of 3,000 ft.

### Sir John Salmond

AIR-MARSHAL SIR JOHN SALMOND, who is advising the Commonwealth Government on the reorganisation of the Australian Air Force, and is now flying round Australia, had a narrow escape when the wireless aerial on his machine came in contact with some electric wires at Manly, New South Wales. After skimming over the buildings the machine reached the seashore, and after a short overhaul, flew north.

### New Atlantic Flight

On August 16 Mr. Bert Hassall and Mr. Parke Cramer left Rockford, Illinois, in a Stinson-Detroit monoplane (Wright "Whirlwind" engine) for Europe via Greenland. In seven hours Cochrane, Ontario, the first stage, was flown, and on August 19 the second stage of 1,400 miles across Northern Quebec to Mount Evans Observatory, Southern Greenland, was commenced. Two hours after leaving the monoplane was sighted over Northern Quebec. A wireless message from the plane later indicated that its position was 75 miles off Cape Chidley and flying over the Davis Strait to Greenland, approximately 400 miles from its objective. That message was received at 3 a.m. on Sunday morning. The airmen had started at noon the day before. The full distance of the proposed flight to Stockholm was 4,300 miles, and a landing was to be made in Iceland as well as Greenland. As we go to Press no news of the airmen has been received.

### Gordon Bennett Race

It is announced that the National Aeronautic Association has been declared the permanent owner of the Gordon Bennett Trophy for winning three successive international balloon races. The German competitors in the 1928 race questioned the decision favouring American competitors, but an official protest was not filed within the required time limit, so the original decision stood.

### Awkward Forced Landing

A RUSSIAN pilot flying an Afghan (D.H.9a) aeroplane made a forced landing on Persian territory recently. He escaped to Afghan country on horseback, but his observer was seized by Persians. The Afghans sent armed parties to recover the machine, but were disarmed and retained by the Persians. Later Persia surrendered the machine.

### Japanese Record with "Jupiter" Engine

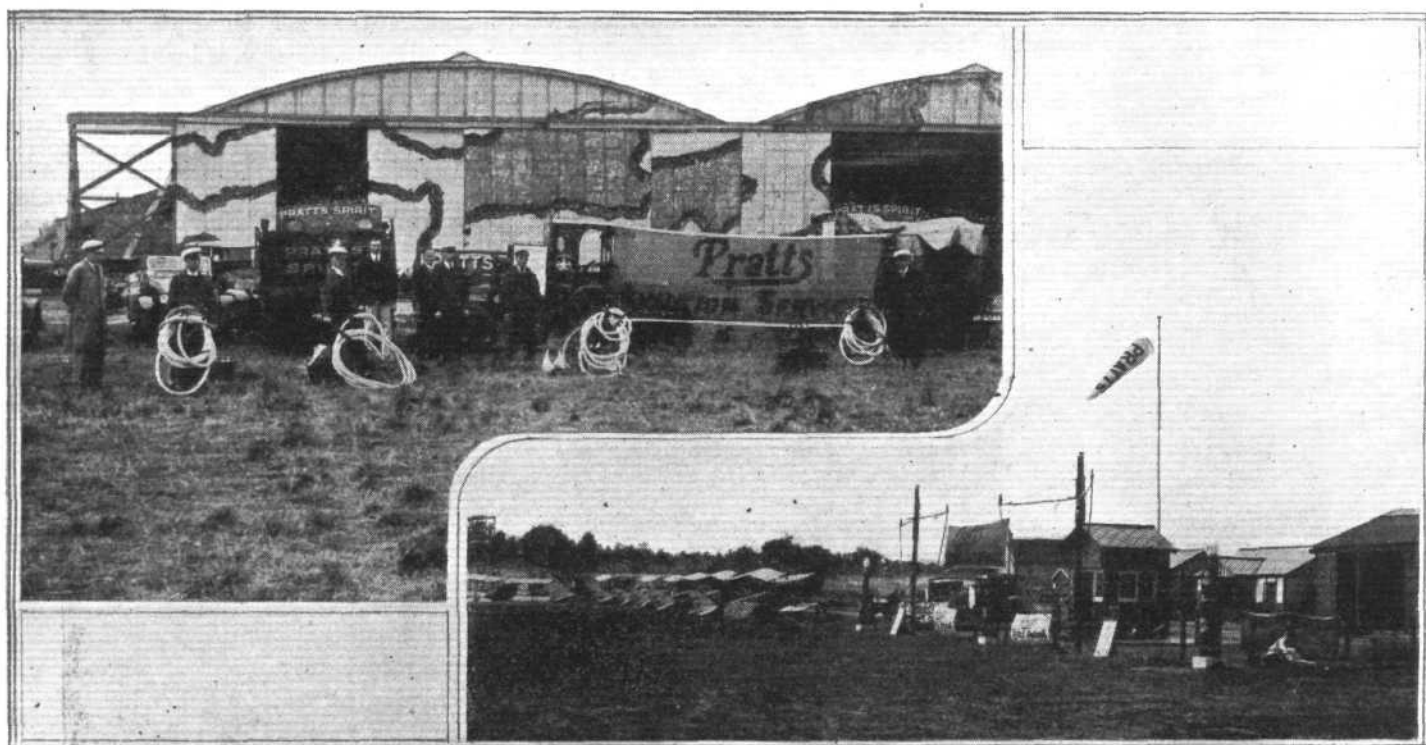
LIEUT. FUKUMORI, of the Imperial Japanese Navy, has just broken the Japanese altitude record on a Nakajima aeroplane fitted with a "Jupiter" engine built under "Bristol" licence in Japan. On landing it was found that two of three altimeters carried by Lieut. Fukumori had broken, and the record cannot be regarded as official until the remaining altimeter has been checked.

### Canada Wants British Pilots

FOR the new flying clubs in Canada British pilots are wanted, preferably with over 1,000 hours' experience. Salaries for the first year would be about 5,000 dollars for chief instructors, and 4,500 dollars per annum for second instructors with good records. These clubs will use D.H. "Moths," and intending applicants should communicate with the De Havilland Aircraft Co., Ltd., Stag Lane Aerodrome, Edgware, who will forward their applications to the proper quarter.

### Italian Polar Expedition

A NEW effort is being made in the search for the members of Gen. Nobile's Italian airship crew who drifted away after the crash on May 24. Maj. Pento and Capt. Sora are to use two seaplanes for the purpose and have already arrived at Beverly Strait on the steamer *Braganza*. Provision depots will be established on the north coast of North-East Land, and reconnaissance flights made to the north-east of Cape Leigh Smith. Expeditions are still engaged in the search for Capt. Amundsen and Comdr. Guilbaud, and will be able to continue up to the beginning of September. Atmospheric conditions in the Arctic are becoming less favourable for the task.



[ "FLIGHT" Photographs ]

**PRATT'S AIR SERVICE FILLING STATION :** Our photos, taken at Brooklands on the occasion of the last King's Cup Air Race, show two views of the fuelling station installed by the Anglo-American Oil Co., Ltd. It was, we believe, the first station of its kind installed in the United Kingdom, and the company now have three such stations—soon, no doubt, when private flying becomes general, they will be common objects of the "airside."



# THE ROYAL AIR FORCE

London Gazette, August 14, 1928.

**General Duties Branch**

Pilot Officer D. L. Maclean is promoted to rank of Flying Officer (July 10); Pilot Officer on probation G. Fachiri is confirmed in rank (July 18); Flying Officer E. L. Burslem is transferred to Reserve, Class A (Aug. 4); Lt. I. R. Grant, R.N., Flying Officer, R.A.F., ceases to be attached to R.A.F. on return to Naval duty (Aug. 1); Lt. B. W. Knowles, R.M., Flying Officer, R.A.F., ceases to be attached to R.A.F. on return to duty with Royal Marines (Aug. 10); Pilot Officer on probation B. W. C. E. Hartwell relinquishes his short service commn. on account of ill-health (Aug. 15).

**Medical Branch**

Flight-Lieut. A. F. Cook is seconded for duty with the Transjordan Frontier Force (Aug. 1).

**Memorandum**

The permission granted to 2nd Lieut. C. C. Green to retain rank is withdrawn on his enlistment in the ranks of the Army (July 12).

**ROYAL AIR FORCE INTELLIGENCE**

**Appointments.**—The following appointments in the Royal Air Force are notified:—

**General Duties Branch**

*Sqdn.-Ldr.*: E. C. Emmett, M.C., D.F.C., to No. 19 Sqdn., Duxford; 10.8.28.

*Flight-Lieuts.*: F. G. Stammers, O.B.E., to Air Ministry, Directorate of Personal Services; 23.8.28. A. L. Chick, A.F.C., to No. 2 Sqdn., Manston; 23.8.28. R. P. M. Whitham, M.C., to Air Ministry, Directorate of Organisation and Staff Duties; 1.9.28. H. F. Bradley, to R.A.F. Depot, Uxbridge; 22.8.28. M. C. Dick, A.F.C., to H.M.S. *Furious*; 1.9.28.

*Flying Officers*: A. D. McDowall, to H.Q., Air Defence of Great Britain, Uxbridge; 20.8.28.

The under-mentioned Pilot Officers are posted on appointment to

**RESERVE OF AIR FORCE OFFICERS****General Duties Branch**

The following are granted commns. in Class A.A. (ii) as Pilot Officers on probation:—C. H. Carter, J. W. T. Jones, A. F. Fleetwood-Lawton (July 30); H. C. Osborne (July 31); C. F. Morris (Aug. 1). The following Pilot Officers on probation are confirmed in rank:—G. H. Robins (July 19); H. P. Fraser (Aug. 2); J. H. M. Smith (Aug. 3); P. Booth (Aug. 4); P. Kinsey (Aug. 8).

Flying Officer H. W. Westaway is transferred from Class A to Class C (May 19); Pilot Officer I. J. Sankey is transferred from Class C to Class A (Aug. 14). The following Flying Officers resign their commissions:—M. K. McGregor (May 16); A. E. Golds (May 19); P. S. Clarke (May 19).

**AUXILIARY AIR FORCE****General Duties Branch**

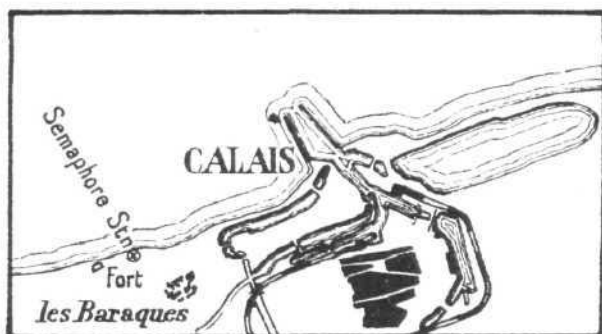
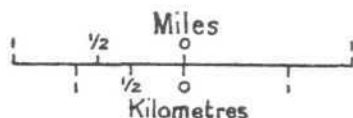
The following to be Pilot Officers:—No. 601 (COUNTY OF LONDON) (BOMBING) SQUADRON.—I. A. Murray (July 17). No. 602 (CITY OF GLASGOW) (BOMBING) SQUADRON.—J. S. Feather (July 10).

Permanent Commissions from the R.A.F. Cadet College, Cranwell, with effect from 28.7.28:—

*Pilot Officers*: J. T. Stephenson, to No. 2 Sqdn., Manston. F. Whittle, to No. 111 Sqdn., Hornchurch. A. E. Dark and A. L. Weait, to No. 12 Sqdn., Andover. W. R. Worstell, C. B. Hughes and J. W. Homer, to No. 99 Sqdn., Upper Heyford. E. M. F. Grundy, to No. 56 Sqdn., North Weald. J. Mutch, to No. 41 Sqdn., Northolt. H. R. Dale and H. J. Pringle, to No. 43 Sqdn., Tangmere. R. J. Cooper and J. A. C. Stratton, to No. 16 Sqdn., Old Sarum. G. N. E. Tindal-Carill-Worsley, J. E. Jorgensen and J. J. Owen, to No. 3 Sqdn., Upavon. L. F. Sinclair, to No. 4 Sqdn., S. Farnborough. N. E. White and A. L. Franks, to No. 29 Sqdn., North Weald. A. Wall, to No. 7 Sqdn., Worthy Down. R. A. Sprague, to No. 13 Sqdn., Andover. F. P. Hewitt, to No. 100 Sqdn., Bicester. J. G. Llewellyn, to No. 58 Sqdn., Worthy Down. R. B. Councell, R. D. Williams, C. Ryley and E. J. Laine, to R.A.F. Base, Calshot. C. V. J. Pratt, to R.A.F. Base, Gosport. P. W. A. Dudgeon, to School of Army Co-operation, Old Sarum.

**AIR MINISTRY NOTICES**

**Flights Across the Channel: Arrangements for Reporting and Search**



DIFFICULTIES have arisen in locating the semaphore stations at Calais (Village des Baraques) and Alprech (near Boulogne), which are mentioned in Notice to Airmen No. 38 of 1928 as reporting points for aircraft on flights across the Channel. The accompanying plans are therefore published to show the position of these semaphore stations and should be attached to the Notice to Airmen in question. (No. 62 of 1928).

**Publication of Orders and Directions**

1. ATTENTION is drawn to the publication of the under-mentioned Orders and Directions:—

Air Navigation (Amendment) (No. 2) Order, 1928, established July 30, 1928.

**Royal Air Force Flying Accidents**

THE Air Ministry regrets to announce that as the result of an accident at Sheikh Othman, Aden, to a Fairey III F machine of No. 8 (Bombing) Squadron, Aden, on August 14, 1928, Flight-Lieut. Edward Norman Tickner Edwardes, the pilot of the aircraft, was killed and the passenger, 362026 L.A.C. Albert Wyndham Jones was slightly injured.

The Air Ministry also regrets to announce that as the result of a collision in the air at Digby between a D.H.9a and an Avro machine of No. 2 Flying Training School, Digby, on August 17, Pilot Officer Adrian Gordon Cole, the pilot of the

Air Navigation (Amendment) (No. 3) Order, 1928, established July 30, 1928.



Air Navigation Directions, 1928 (A.N.D.4C), dated July 26, 1928.

Air Navigation Directions, 1928 (A.N.D.6B), dated August 5, 1928, which are obtainable from H.M. Stationery Office, Adastral House, Kingsway, London, W.C.2, or through any bookseller.

2. It should be noted that under the Air Navigation (Amendment) (No. 3) Order, 1928, which comes into force on September 1 next, all flying machines when flying at night are required to carry side lights having a minimum range of 5 miles instead of 3 miles as hitherto, and no white forward light should be displayed except when manœuvring on the water.

(No. 63 of 1928.)



Avro machine, and Pilot Officer Bertrand Guy D'Olier, a passenger in the D.H.9a, were killed. Flying Officer Alfred Rodney Feather, the pilot of the D.H.9a, died of his injuries after admission to hospital.

**D.H. "Moths" for Danish Army**

THE Danish Army Flying Corps have ordered D.H. "Moths" from England for instruction flying.

**Short "Calcutta" on Channel Service**

IMPERIAL AIRWAYS are to use a Short "Calcutta" flying boat on their holiday air service from Southampton to the Channel Islands.

# SIDEWINDS

RANSOME AND MARLES BEARING CO., LTD., of Newark-on-Trent, have just issued a new edition of their abridged catalogue, giving details of the most frequently adopted types and sizes of R. and M. bearings, which should be of assistance to all users of ball and roller bearings. It can be supplied to our readers on request to them.

## Zenith Carburettors

IN Capt. W. L. Hope's "Gipsy-Moth" and Miss W. E. Spooner's "Cirrus" Moth, first and third respectively in the King's Cup Race, Zenith carburettors were used.

## London Office of Bristol Aeroplane Co., Ltd.

THE Bristol Aeroplane Co., Ltd., have now opened a London office at Bush House, Aldwych, W.C.2, under the care of Maj. C. J. W. Darwin.

## "Salvator" Parachute

WITH a "Salvator" parachute Lieut. J. Torrisi saved himself on July 25 when his machine spun to earth from 1,200 ft.

## Rolls-Royce "F" Engines

THE Rolls-Royce type "F" engine, which was described in our issue for May 3 last, is now in full production, orders for a considerable number having been placed by the Air Ministry.

## Cattewater to Re-Open

THE Cattewater seaplane base, Plymouth, which has not been used actively by the Royal Air Force since the War, is now to be re-opened, and it is probable that Supermarine-Napier flying boats will operate from there.

## Stranraer Harbour for Service Use

STRANRAER Town Council has granted permission to the Air Ministry to use Stranraer Harbour and Loch Ryan as a base for Service seaplanes.

## H.M.S. "Furious" on View

THE aircraft-carrier H.M.S. *Furious* is on view for public inspection in the programme of the Portsmouth Navy Week.

## Rewards

GOLD medals have been awarded by the Swedish Government to Capt. Cambery, Capt. Lundborg, and 25 other Swedes who took part in the rescue of Gen. Nobile and others of the disastrous Italian Polar Expedition.



["FLIGHT" Photograph

"FAIRCHILDREN": Captain Cyril Turner and Mrs. Turner, both of whom are pilots, are at present on a visit to this country from Paris. Captain Turner, who was one of the original "sky-writing" pilots, is now European representative of the Fairchild Aviation Corporation.

# PUBLICATIONS RECEIVED

*The War in the Air: Being the Story of the Part played in the Great War by the Royal Air Force. Vol. II.* By H. A. Jones. Oxford University Press, Amen House, Warwick Square, London, E.C.4. Price 17s. 6d. net.

*Revue Juridique Internationale de la Locomotion Aérienne.* January, February, March, 1928. Per Orbem. 4, Rue Tronchet, Paris.

*Progres de la Metallurgie et Leur Influence sur l'Aéronautique.* By M. Gaëtan Py. Librairie Chaix, 20, Rue Bergere, Paris (IXe). Price 5 fr. net. Obtainable from the Penton Publishing Co., Ltd., Caxton House (East), Westminster, London, S.W.1.

*Anuario Guia de Aeronautica*, 1928. "Autoaero," Buenos Aires.

*Aeronautical Research Committee Reports and Memoranda:* No. 1115 (Ae. 288). The Importance of "Streamlining" in Relation to Performance. By Prof. B. M. Jones, M.A., A.F.C. September, 1927. Price 9d. net. No. 1120 (Ae. 293). Analysis of Experiments on an Airscrew in Various Positions within the Nose of a Tractor Body. By C. N. H. Lock, M.A. September, 1927. Price 1s. net. No. 1134 (Ae. 304). Wind Tunnel Tests with High Tip Speed Airscrews. The Characteristics of Airscrew Section, R. & M. 322. No. 4 and R.A.F. 32. By W. G. A. Perring. January, 1928. Price 6d. net. No. 1135 (Ae. 305). The Effect of Compressibility on the Lift of an Aerofoil. By H. Glauert. September, 1927. Price 6d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

*Moniteur Officiel du Commerce et de l'Industrie.* No. 297. July 4, 1928. Office National du Commerce Extérieur, 12, Avenue Victor-Emmanuel III, Paris. Price 4 fr. 50.

*The Air Pilot Monthly Supplement.* No. 45. July, 1928. The Air Ministry, Kingsway, London, W.C.2.

*Canadian Military Institute. Selected Papers from the Transactions of the Institute, 1926-27.* No. 15. Canadian Military Institute, Toronto, Canada.

*Dominion of Canada: Report on Civil Aviation and Civil Government Air Operations for the Year 1927.* Department of National Defence, Ottawa, Canada. Price 25 cents.

# NEW COMPANY REGISTERED

THE W.C. GAUNT CO., LIMITED, 198, Piccadilly, W.—Capital £10,000, in £1 shares. Acquiring the business of a motor trader, carried on by W. C. Gaunt, at 198, Piccadilly, W., and at the London Aerodrome, Hendon. Secretary, H. E. Surplice.

# AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

## APPLIED FOR IN 1927

Published August 23, 1928

- 7,660. HOLZVERKOHLE-INDUSTRIE A.-G. Airships. (274,811.)
- 11,258. M. C. MACPHERSON. Braking of undercarriage or landing-wheels. (294,592.)
- 11,501. P. SCHILOVSKY. Gyroscopic rate of turning indicator. (294,691.)
- 11,654. H. R. RICARDO. I.c. engines. (294,704.)
- 11,655. H. R. RICARDO. Crankshafts. (294,705.)
- 12,007. S. E. SAUNDERS and H. KNOWLER. Flying-boats or seaplanes. (294,713.)
- 21,875. H. J. L. HINKLER. Aeroplanes having folding wings. (294,783.)
- 32,832. N. FLORINE and Soc. NATIONALE POUR L'ETUDE DES TRANSPORTS AERIENS Soc. ANON. Helicopter. (281,721.)

## APPLIED FOR IN 1928

Published August 23, 1928

- 9,131. ROHRBACH METALL FLUGZEUGBAU GES. Engine-cooling means for seaplanes. (287,873.)

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